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Insect in Texas Found Possible Vector of Chagas' Disease

Illness Among Industrial Workers, First Quarter of 1939

Report of an Outbreak of Botulism Occurring in Tennessee

FEDERAL SECURITY AGENCY

UNITED STATES PUBLIC HEALTH SERVICE

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Public Health Reports

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PREVALENCE OF POLIOMYELITIS

During the week ended August 19, 343 cases of poliomyelitis were reported in the United States, as compared with 261 cases for the preceding week, and with a median figure of 335 cases for the corresponding week of the 5-year period 1934–38. This is the first week during the year in which the number of cases reported has exceeded the median, the figure which represents the number of cases which might normally be expected at this season of the year.

The States reporting the largest numbers of cases were as follows: Michigan 87 cases (of which 64 were in Detroit); California 55 (with 15 cases in Los Angeles); Minnesota 39 (of which 11 were in Minneapolis); New York 39 (with 14 cases reported from Buffalo and 16 from New York City); Pennsylvania 15; South Carolina 15; Illinois 13; New Jersey 12; and Texas 11 cases. Over three-fourths of the reported cases occurred in these 9 States. Sixteen States reported no cases, and 9 States reported only 1 case.

NATURAL INFECTION OF *Triatoma gerstakeri* WITH *Trypanosoma cruzi* IN TEXAS [1]

By ARDZROONY PACKCHANIAN, *Protozoologist, United States Public Health Service*

INTRODUCTION

Trypanosoma cruzi was isolated by Chagas in 1907 in Brazil and described by him in 1909. He proved that this parasite is the causative agent of the disease which now bears his name (*1, 2, 15*).

American trypanosomiasis, or Chagas' disease, has been thought to be confined to South America (Argentina, Brazil, Guatemala, Paraguay, Peru, Salvador, Uruguay, and Venezuela) (*3, 5, 8*), and Panama (*10*).

The transmission of this disease in man and in animals takes place naturally through an intermediate host, usually a reduviid

[1] From the Division of Infectious Diseases, National Institute of Health.

bug (*Triatoma, Rhodnius*). About 46 species of *Triatoma* have been identified and reported thus far throughout the world. Of these, 15 species are known to exist in several States of the United States (*4, 9, 14*). Two species of these reduviid bugs, *Triatoma protracta* and *Triatoma uhleri*, are known to be naturally infected with *Trypanosoma cruzi* in Arizona and California (*6, 7*). The present study adds another species, namely, *Triatoma gerstakeri*, within the United States naturally infected with *Tr. cruzi* and capable of transmitting *Tr. cruzi* infection in man and animals.

METHOD AND MATERIAL

Field studies.—For the purposes of collecting live specimens of various species of *Triatoma*, and of studying their epidemiological significance, two field studies were conducted by the writer in the State of Texas, during October 1937 and September 1938. The work was conducted principally in the cities of Austin, Dallas, Galveston, Houston, and San Antonio, and in Bell, DeWitt, Duval, Live Oak, and Wells Counties.

It was learned that *Triatoma*, which is locally known as "blood sucker," "Mexican bed-bug," and "kissing bug," is widely distributed in the State of Texas and has become a household pest in certain localities. Three species of *Triatoma* were found, *T. gerstakeri*, *T. heidmanni*, and *T. sanguisuga*. (The author is indebted to Mr. H. Barber, U. S. Department of Agriculture, for the identification.) The former species, *T. gerstakeri*, was found chiefly in Live Oak County. Apparently, adult reduviid bugs are very common during May, June, and July, not only in Live Oak County but also in the nearby counties.

Large numbers of *Triatoma gerstakeri* were found on a farm about 15 miles from the town of Three Rivers. Adults were seen in the house and barn, while the nymphs were located in the nests of wood rats (*Neotoma micropus micropus*). A housewife in this community stated that she and members of her family had killed 300 or more "blood suckers" every night for 6 weeks and that the bugs had been abundant every summer.

More than 500 persons who had been bitten by these bugs at one time or another were found by personal inquiries. The bug sucks a considerable amount of blood at each feeding. Chickens, cows, hogs, and human beings are the most common victims.

Over 100 live *Triatoma gerstakeri*, which represent the material for the present study, were collected on one farm, near Three Rivers, while many live specimens have been sent to the writer from time to time from the same area. Most of the adult bugs were collected at night in and around the house. (See figs. 1, 2, and 3.)

Demonstration of the natural infection of Triatoma *with trypanosomes.*—With a slight pressure on the abdomen of the insect, droplets of fecal excretion were obtained and examined microscopically in cover-glass preparations. The saliva of the insect was obtained by a slight pressure of forceps over the thorax and head. The small droplet of liquid obtained from the proboscis was likewise examined microscopically. Occasionally one or more insects were sacrificed and their intestinal contents were suspended in physiological salt solution for animal inoculation purposes and for smears. The smears were fixed in absolute alcohol for five minutes and stained by Novy's modification of Romanowsky's stain.

Experimental animals and methods of inoculation.—Mice, guinea pigs, and rhesus monkeys were inoculated with the intestinal contents of insects suspended in salt, Ringer's, or Tyrode solution. The mice were inoculated intraperitoneally, the guinea pigs and the monkeys subcutaneously. Blood samples were obtained from the monkeys before inoculation for cultural studies to eliminate the possibility of natural trypanosomiasis.

Subinoculation into mice and guinea pigs was made by using about two drops of blood from an infected animal in about 0.5 cc. of salt solution.

Microscopic examination of the blood for demonstration of infectivity of test animals.—Samples of blood from the tails of mice and from the ears of guinea pigs and monkeys were examined microscopically in cover-glass preparations (objectives 21X and 45X, ocular 10X) and results were recorded at the end of about 5 minutes' search. Occasionally blood obtained from the heart was used for this purpose.

Culture in vitro.—The blood obtained from the heart of experimentally infected animals was defibrinated and a few drops introduced into N. N. tubes (agar slants containing from 20 to 30 percent defibrinated rabbit's blood). The tubes were sealed by rubber caps and incubated at 25° C. from 1 to 6 weeks. Subcultures from positive tubes were made monthly.

Staining of trypanosomes.—At various intervals, smears were made from cultures and from the blood of experimental animals as well as from the intestinal content of insects. These were fixed in absolute alcohol from 3 to 5 minutes, or in equal volumes of ethyl alcohol and ether for 5 minutes, and by osmic acid vapor for 10 seconds, and stained by Leishman's stain and by Novy's modification of Romanowsky's stain.

Microscopic pathology.[2]—The organs and tissues of test animals (usually the heart) were fixed in 10 percent formalin. After fixation

[2] The writer is indebted to Dr. Ralph D. Lillie and Dr. L. L. Ashburn, Division of Pathology, for their cooperation in this work and reports of histopathological findings.

and dehydration, the tissues were embedded in paraffin and sections were stained by Lillie's modification of Romanowsky's stain.

EXPERIMENTAL DATA

Natural infection of Triatoma gerstakeri *with trypanosomes.*—Of 100 live *Triatoma gerstakeri* collected at Three Rivers, Tex., 92 percent were found to be naturally infected with trypanosomes. The flagellates were readily demonstrable by microscopic examination in the material from the intestines and in the fecal excretions, but were never found in the saliva. The flagellates as seen in the material from the intestines of naturally infected *Triatoma gerstakeri* were chiefly crithidia and herpetomonas forms; occasionally metacyclic trypanosome forms with complete but narrow undulating membranes were also seen. These forms as observed in cover-glass and stained preparations were indistinguishable from stained and live specimens of *Trypanosoma cruzi* encountered in experimentally infected *Triatoma megista* and *Triatoma sanguisuga* (fig. 4).

Demonstration of Trypanosoma cruzi *in the blood of experimentally infected animals.*—Forty-four animals—34 mice (27 *Mus musculus*, 4 *Peromyscus eremicus eremicus*, and 3 *P. leucopus noveboracensis*), 8 guinea pigs, and 2 monkeys (*Macacus rhesus*)—were inoculated with the fecal material from different lots of *Triatoma gerstakeri*. Each series of studies included from 2 to 10 animals. All the insects came from the same locality, namely, Three Rivers, Tex. Microscopic examinations of the blood from experimentally inoculated animals were performed occasionally; the trypanosomes were demonstrated in peripheral blood at one time or another in 18 out of 44 animals. They were not found in large numbers in the peripheral circulation. The largest number seen in a given cover-glass preparation (objective 45X, ocular 10X) was about 4 trypanosomes per microscopic field. At times no trypanosomes were demonstrable during 5 minutes of microscopic search, even though previous or later examinations had shown a few. Such negative results, which are noted in the table as "0," indicate that trypanosomes were not found during 5 minutes of search. A longer period of observation, or the examination of another preparation from the same animal within the same hour, occasionally revealed scanty numbers of parasites. The flagellates were usually demonstrable in the peripheral blood beginning the second week following the inoculation and were likewise demonstrable at various intervals in the blood of the animals for 7 months following the inoculation (table 1).

The trypanosomes which were seen in the blood of mice, guinea pigs, and monkeys were similar in morphology to Brazilian strains of *Tr. cruzi* isolated directly from human beings (fig. 5). *Tr. cruzi* are usually curved and stumpy, and their movement, unlike *Tr. brucei* or *Tr. lewisi*, is twisting and reversal in character giving rise to shapes

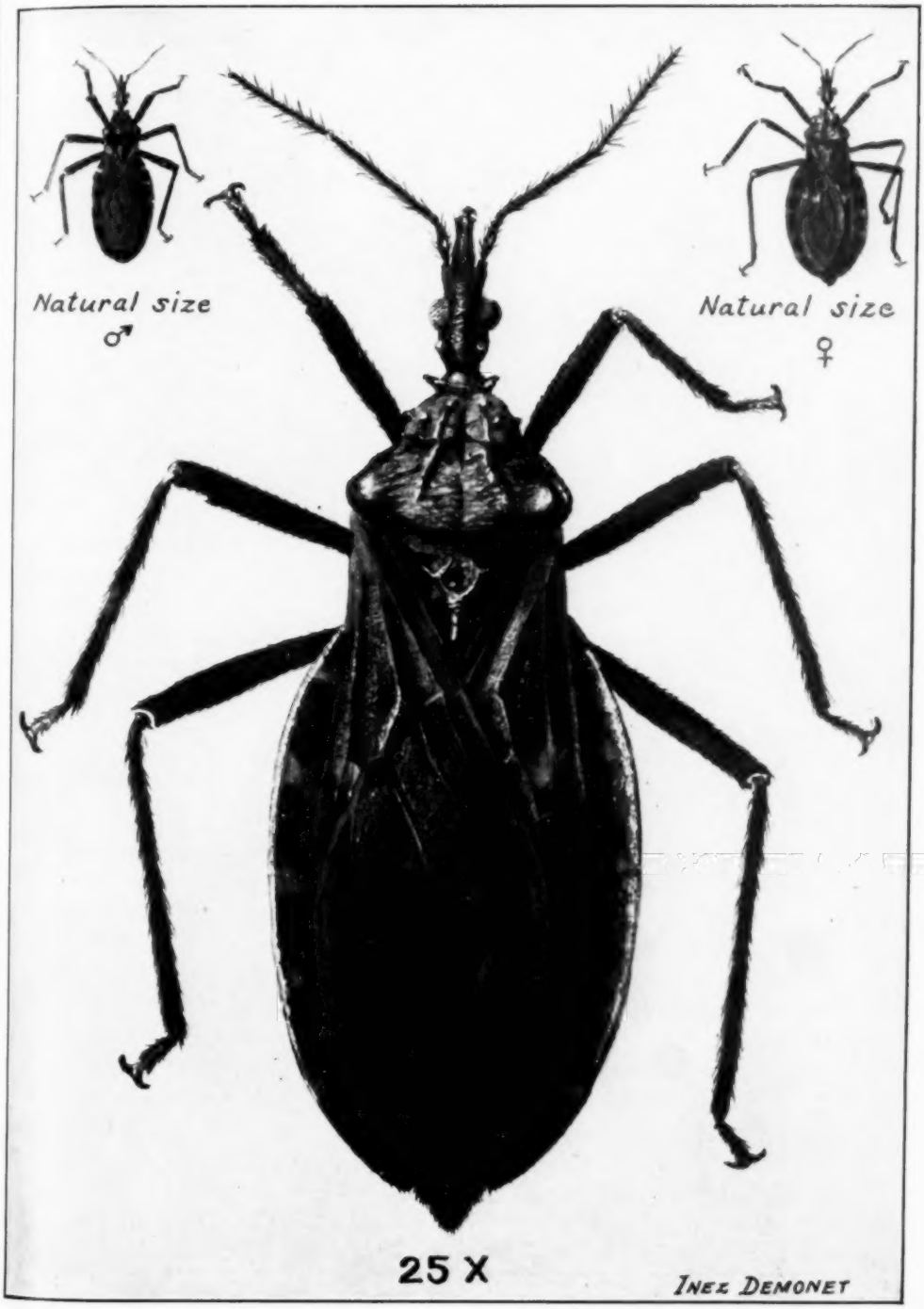

FIGURE 1.—*Triatoma gerstakeri.* (Reproduction from colored drawing.)

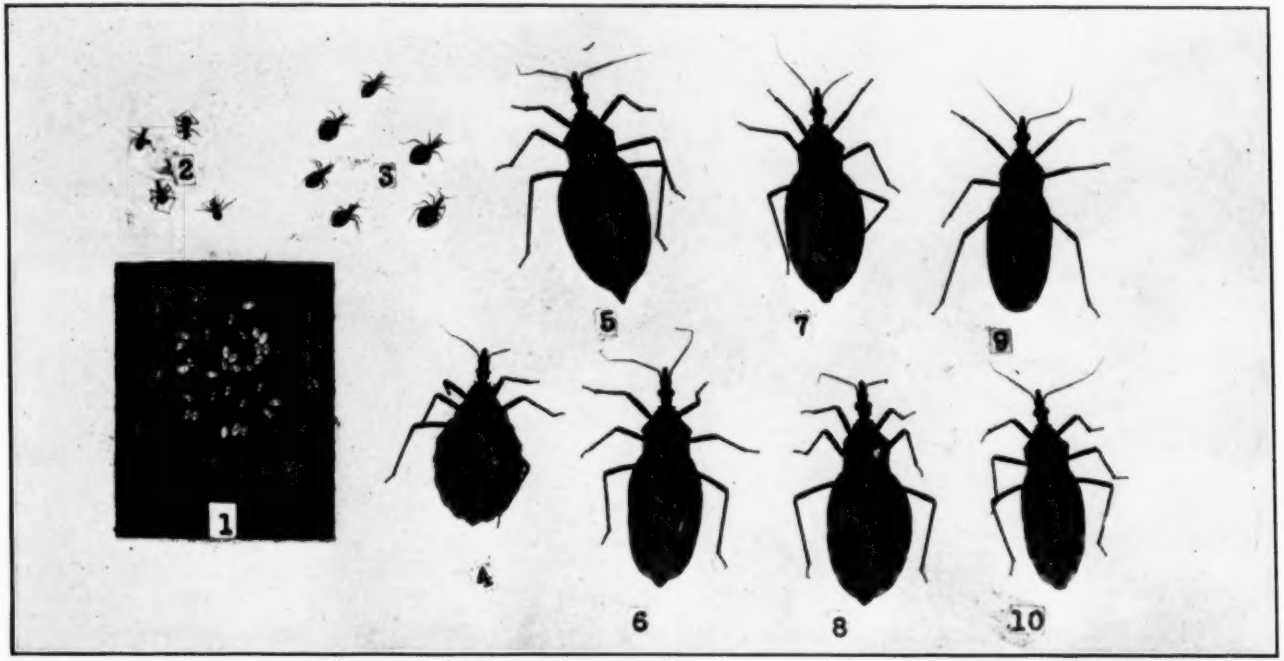

FIGURE 2.—*Triatoma gerstakeri* (photographed natural size). 1, Eggs; 2, newly hatched nymphs; 3, young nymphs after blood meal; 4, large nymph; 5, 6, 7, 8, adult females; and 9, 10, adult males.

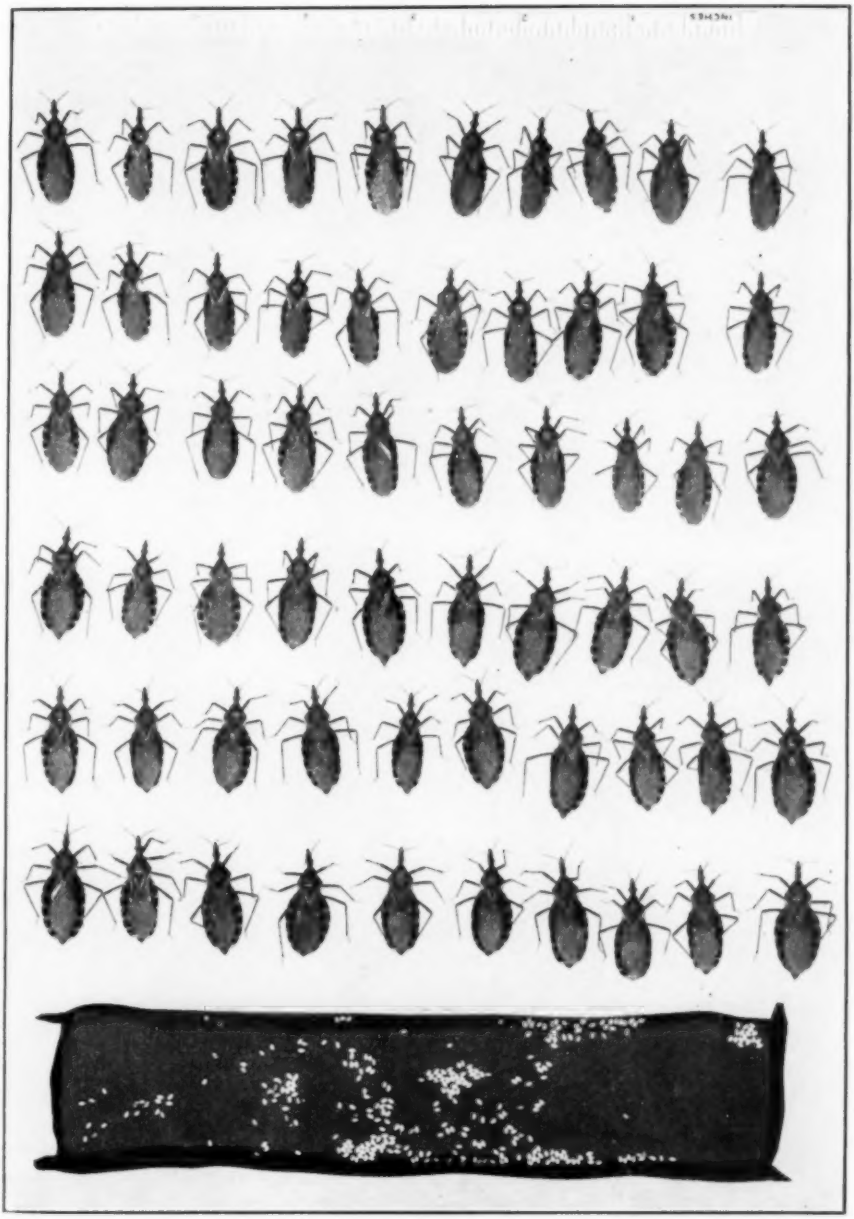

FIGURE 3.—Sixty specimens of adult *Triatoma gerstakeri* (30 ♂ and 30 ♀) and a number of eggs of *T. gerstakeri*. Sizes reduced to the scale. Note slight individual variations in size.

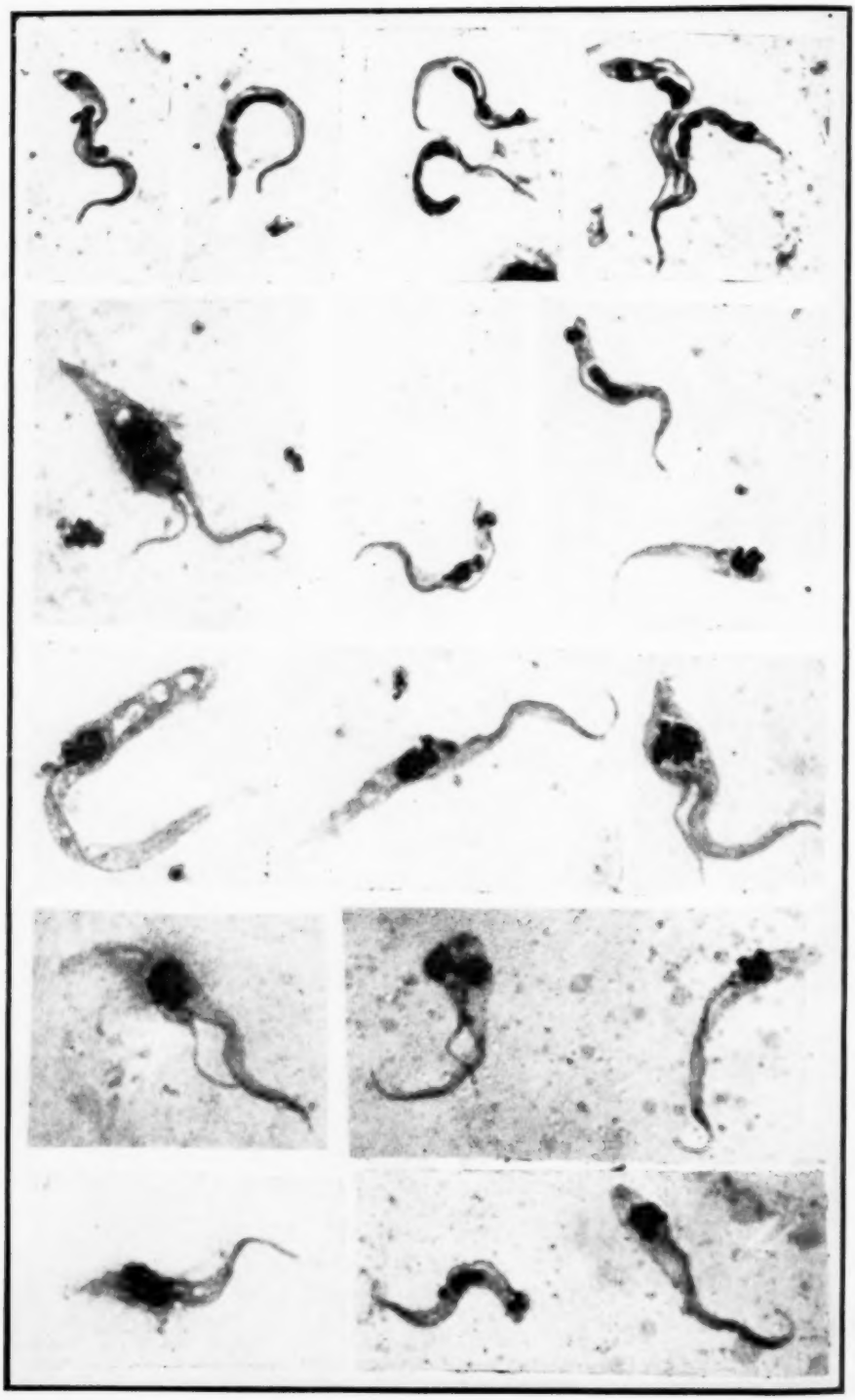

FIGURE 4.—Smears of intestinal contents of a few *Triatoma gerstakeri*, naturally infected with *Trypanosoma cruzi*. Leishman's stain (× 1,600). Note metacyclic trypanosome forms, crithidia, and dividing forms (14 microscopic fields).

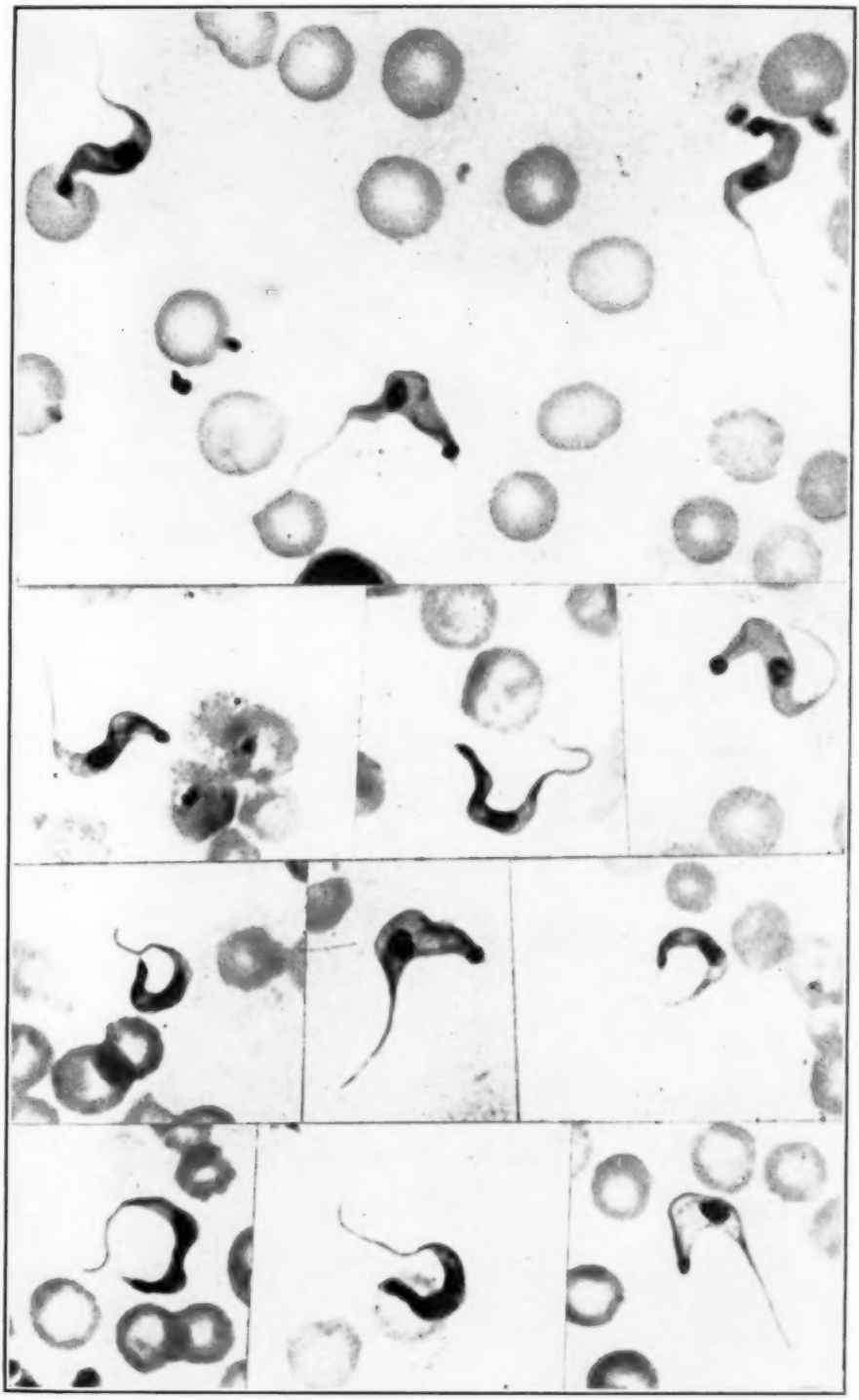

FIGURE 5.—*Trypanosoma cruzi* (× 1,600). Blood smears from two mice experimentally infected with the intestinal contents of naturally infected *Triatoma gerstakeri*. (From 10 microscopic fields).

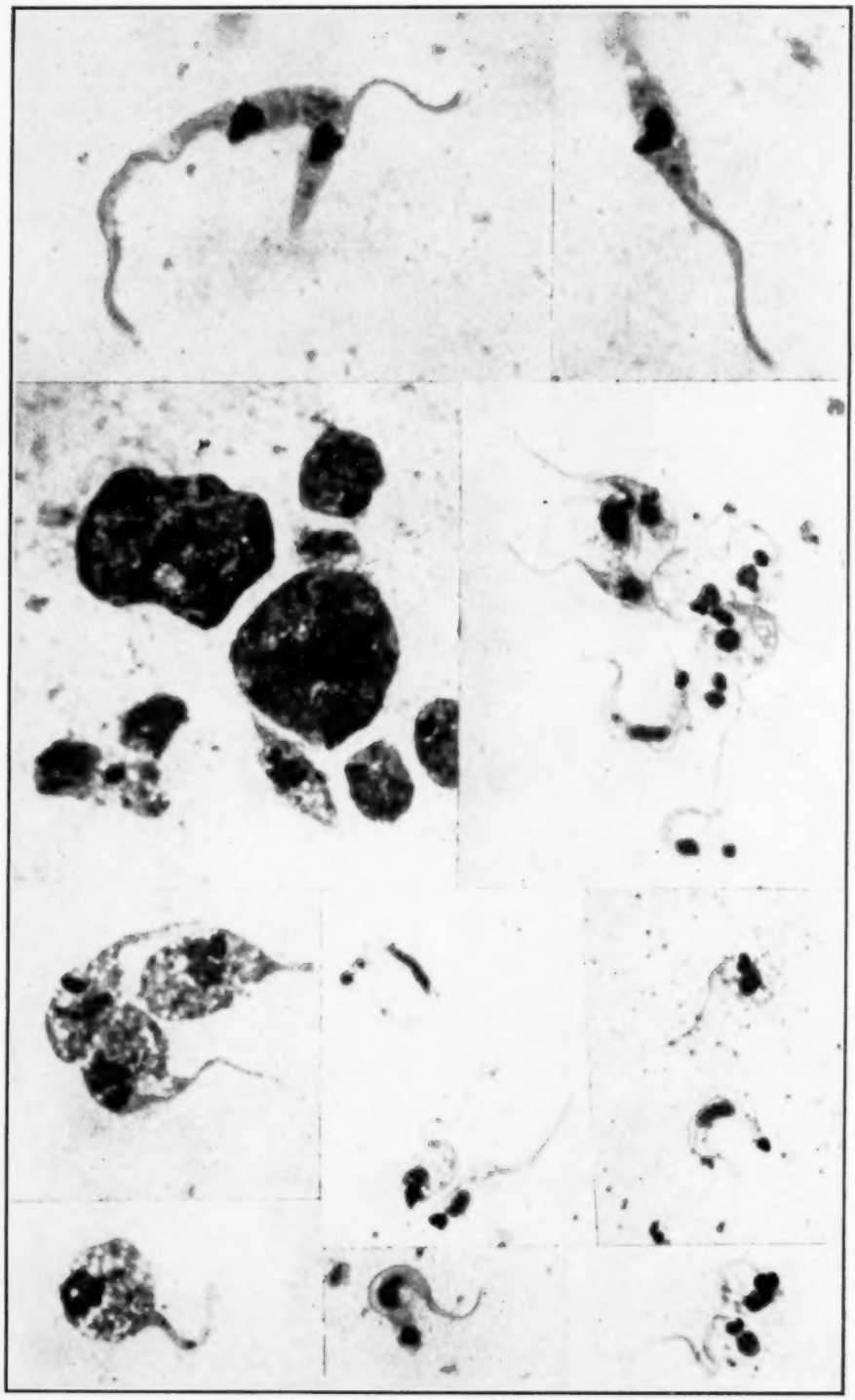

FIGURE 6.—Cultural forms of *Trypanosoma cruzi* (Texas strain) 5th generation *in vitro* (× 1,600) stained by Novy's modification of Romanowsky's stain. (From 10 microscopic fields.)

FIGURE 7.—Cultural forms of *Tr. cruzi* in process of division (Texas strain 5th generation *in vitro*) (× 1,600) stained by Novy's modification of Romanowsky's stain. (From 8 microscopic fields.)

FIGURE 8.—Section of the heart of an experimentally infected mouse. Leishmania forms of segmenting *Tr. cruzi* are within a muscle fiber (× 2,500).

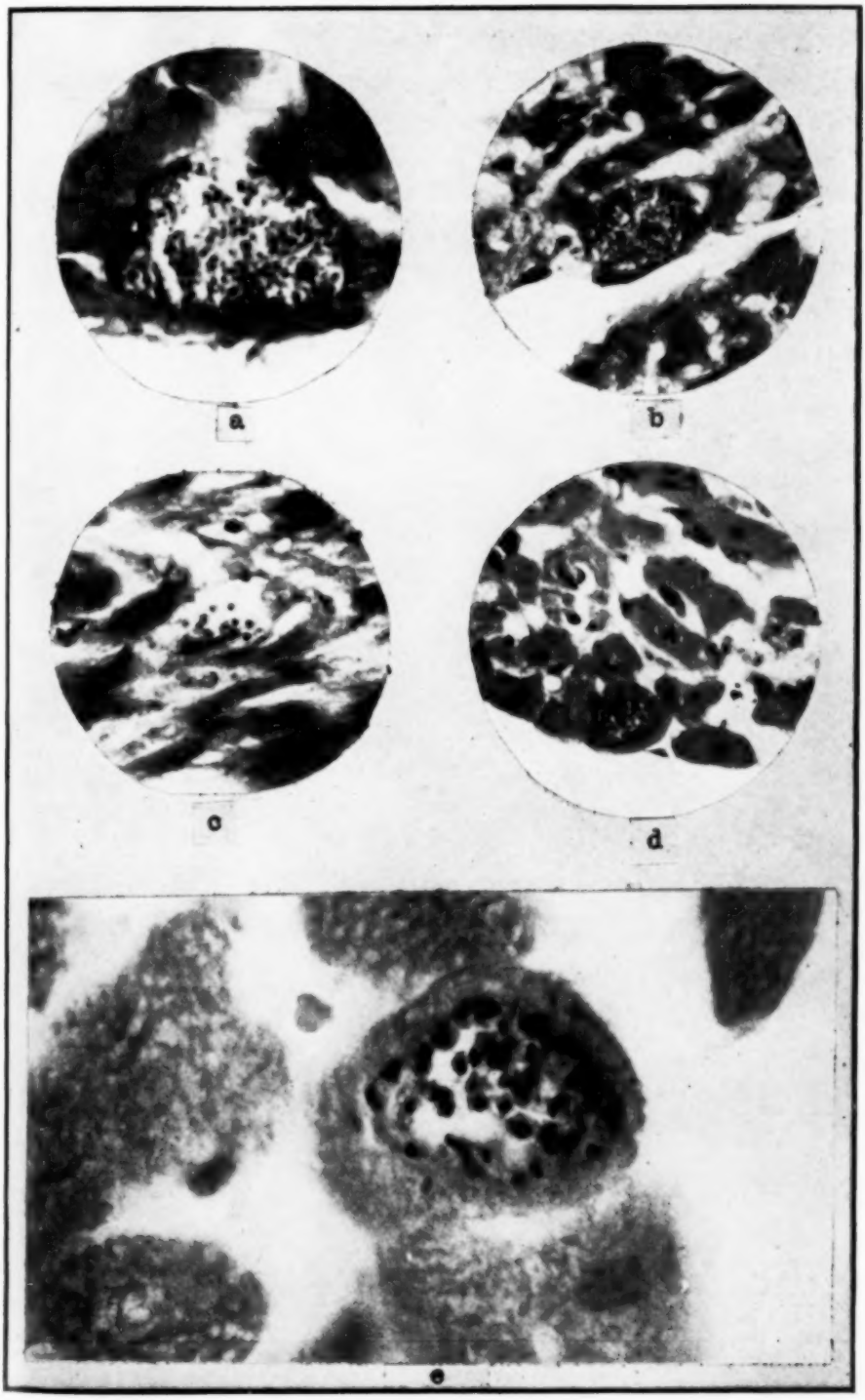

FIGURE 9.—Sections of the hearts of mice; leishmania forms of segmenting *Tr. cruzi* are found within muscle fibers. *a*, *b*, *c*, and *d* are magnified 500 times, while *e* is magnified 1,000 times. (Note *d* and *e* are the same loaded muscle fiber with different magnification.)

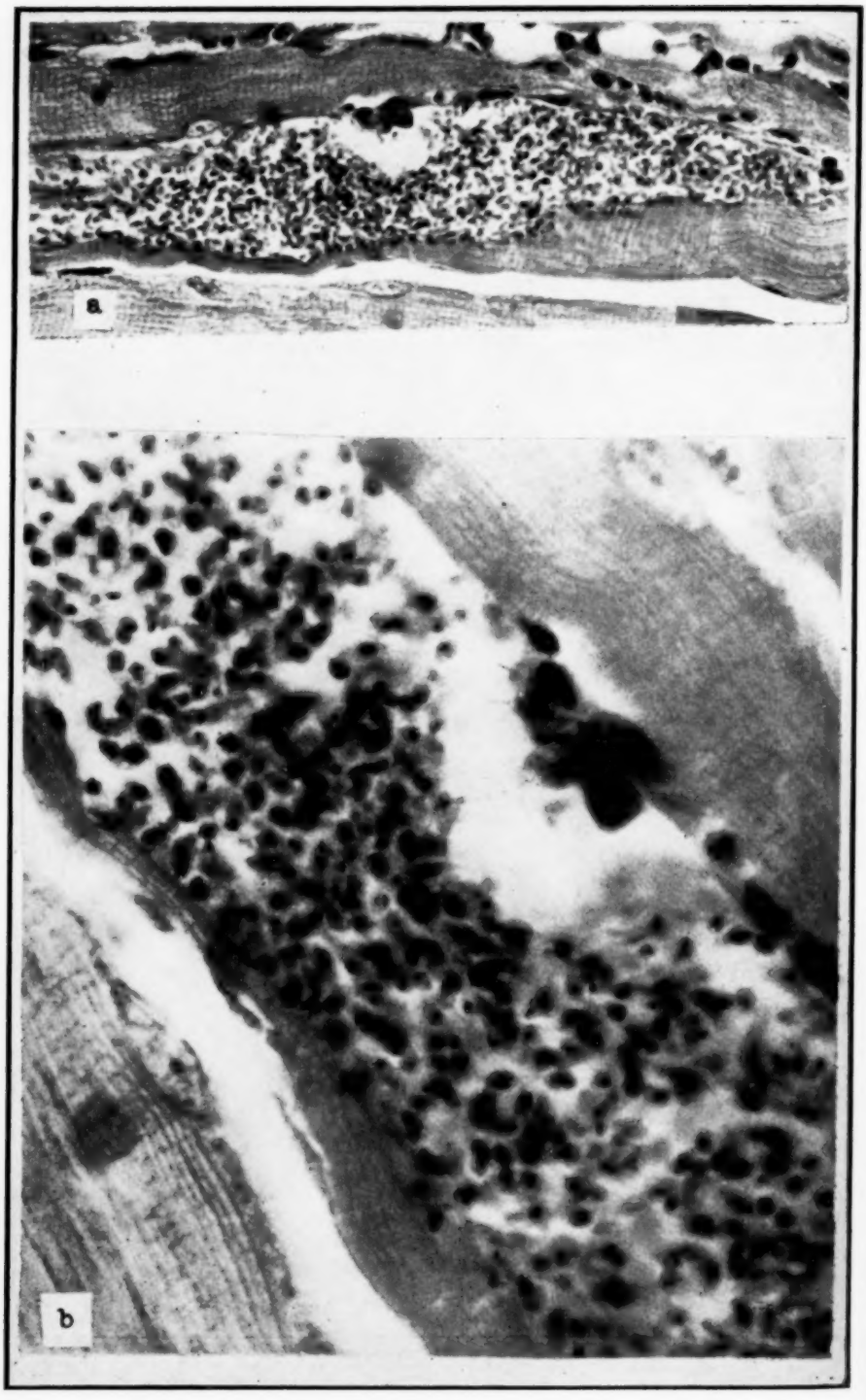

FIGURE 10.—Section of the heart of a mouse containing numerous leishmania-like forms, *Tr. cruzi*, within muscle fibers. (*a*, × 500; *b*, × 1,600.)

resembling the letters "S" and "C." The parasite remains in a given microscopic field (objective 45X, ocular 10X) for over 10 minutes. The movements described above appear to be characteristic of *Tr. cruzi*. The flagellates are infective to susceptible test animals (table 1).

TABLE 1.—*Cultural and microscopic findings in animals inoculated with the intestinal contents of* Triatoma gerstakeri

Key No.	Species of animals inoculated with intestinal content of naturally infected *Triatoma gerstakeri*	Microscopic examination for trypanosomes in peripheral blood		Cultural attempts		Autopsy, number of days after inoculation
		Number of days after inoculation	Results	Number of days after inoculation	Results	
1431-1	Mus musculus	14, 21	++	21	+	[3] 21
1441-1a	do	14, 17, 145	0, 0, 0	145	+	[3] 145
1441-1b	do	14, 17, 145	0, 0, 0	145	+	145
1441-1c	do	14, 17, 145, 160	0, 0, 0, +			167
1448-1a	do	149, 156	0, 0	156	+	156
1448-1b	do	149, 156, 210	0, 0, +	210	+	210
1448-2b	do	3, 134	0, 0	134	0	134
1448-2c	do	3, 134, 149, 156	0, 0, 0, 0	156	+	156
1449-1a	do	37, 134	+, 0	134	0	[3] 134
1449-1b	do	37, 149, 156	+, 0, +	156	+	156
1449-2	do	37, 134	+, 0	134	+	[3] 134
1451-1a	do	24, 131	+, 0	131	+	131
1451-1b	do	24, 153	0, 0	153	+	153
1441-2a	Peromyscus eremicus	14	+	14	+	[3] 14
1441-2b	do	14, 145	+, 0	145	0	145
1441-2c	do	14, 48, 145, 167	+, 0, 0, 0	167	0	167
1439-2	Guinea pig	164	0	164	0	164
1440-1	do	161	0	161	0	161
1440-2	Rhesus monkey	16, 160	+, 0	16, 160	+, 0	160
1450-2	do	35, 138, 247, 372	+, 0, 0, 0	35, 138 247, 372	++++	Alive
1519-1a	Mus musculus [1]	4, 8, 9, 15, 23	0, 0, 0, +, +	23	+	[3] 23
1519-1b	do [1]	9, 15, 39	0, +, +	39	+	[3] 39
1519-2a	Guinea pig [1]	9, 15, 21, 23	0, 0, 0, +	23	+	23
1519-2b	do [1]	15, 21, 39	0, 0, +	21, 39	+, +	39
1448-1c	Mus musculus	149, 169, 210	0, 0, +	210		210
1448-2c	do	149, 248	0, 0	248	+	248
1452-1a	do [2]	29, 153	0, 0	153	0	153
1531-1	do [2]	16, 20, 135	0, 0, 0	135	+	[3] 135
1537-1	do [2]	115	0	115	+	115
1562-2a	do	54	0	54	+	[3] 54
1562-2b	do	54	0	54	+	[3] 54
1562-1a	Guinea pig	55	0	55	+	55

[1] Mice Nos. 1519–1a and 1519–1b and guinea pigs Nos. 1519–2a and 1519–2b were inoculated with culture of *Tr. cruzi* (fifth generation) isolated from mouse 1449–1a.

[3] Leishmania forms of *Tr. cruzi* were found in isolated muscle fibers in the sections of the heart of 10 animals.

[2] Mouse 1452–1a was inoculated with blood from mouse 1441–2; mouse 1519–1 and mouse 1537–1 were inoculated with blood from mouse 1529–2. The remaining 25 animals in this table were inoculated with intestinal contents of naturally infected *Triatoma gerstakeri*.

Trypanosoma cruzi in blood smears stain readily with Romanowsky's stain. The microorganisms as seen in stained preparations are curved and stumpy. Some individuals are broad, others narrow. The nucleus is usually central or slightly anterior to the center. The kinetoplast, which is large and ovoid, is located very close to the pointed posterior end. The undulating membrane is narrow and only slightly convoluted. The flagellum represents about one-third of the total length of the organism (fig. 5).

Cultural studies.—Out of the 35 cultural attempts, 27 gave rich growths of trypanosomes *in vitro*. Whenever trypanosomes were

demonstrable microscopically in the blood of inoculated animals at the time of bleeding, positive cultures were obtained. No trypanosomes were demonstrable in peripheral blood microscopically in 24 animals at the time of bleeding. However, positive cultures were obtained from 16 of these animals (table 1). The growth *in vitro* reached its maximum in about a month. In many cultures the colonies of trypanosomes were macroscopically noticeable in slant portions of blood agar slants. The viability of the flagellates on such a medium is remarkable. At times, even after the end of the fourth month, subcultures were obtained from original cultures taken. The subcultures were usually made monthly. They grew readily and luxuriantly, and were capable of infecting susceptible animals (table 1).

The cultural forms at times have an astonishing morphology. Certain forms are apparently more or less a constant feature of *Tr. cruzi*. The round bodies, irregular rosettes, narrow and broad, short and long crithidia and herpetomonas forms with long flagellum, and at times metacyclic trypanosome forms with complete but narrow undulating membranes are found side by side; dividing forms are met with frequently. As cultures grow older, the more rounded leishmania form; granulated and tadpole shaped trypanosomes are found in the free swimming stage, in rosettes, and in large aggregations. The cultural forms take stain readily (figs. 6 and 7).

Microscopic pathological findings.—Thirty-four infected animals were etherized at various stages of the disease (the minimum duration of infection was 21 days, the maximum, 210 days). The heart blood was removed for cultural and serologic studies, organs were fixed in 10 percent formalin and sent to the Division of Pathology for sectioning and staining. The slides were all examined by Dr. Ralph D. Lillie or Dr. L. L. Ashburn of the Division of Pathology, and by the writer. The usual interstitial myocarditis of American trypanosomiasis was found in practically every animal. Leishmania-like forms of segmenting trypanosomes, with a small, round, pale, basophilic nucleus and very deeply staining rod-shaped basophilic blepharoplast were found in cardiac muscles in only 10 mice (1 *Peromyscus eremicus*, 9 *Mus musculus*) (figs. 8, 9, and 10).

DISCUSSION

The field studies and experimental data at hand have shown that *Triatoma gerstakeri* in Texas is naturally infected with *Trypanosoma cruzi*. The flagellates, by virtue of their undulating membrane, are usually readily recognizable as being trypanosomes; furthermore, besides the crithidial forms there are found metacyclic forms of trypanosomes with narrow but complete undulating membranes. However, to prove that they are actually *Trypanosoma cruzi* requires animal inoculations, with subsequent microscopic demonstration of trypanosomes

in the blood of these test animals, and confirmation by cultural and serological tests (*11*, *12*, *13*). The final proof consists in the demonstration of leishmania forms of trypanosomes in sections of tissues, particularly in cardiac tissues (*1*, *2*, *3*).

Inasmuch as *Tr. cruzi* are not numerous in the blood of infected mice, guinea pigs, and monkeys, at times a microscopical search of 5 to 15 minutes or more must be made before a single trypanosome can be found. Therefore, a negative observation does not eliminate the possibility of infection.

The cultural tests are more satisfactory. They give positive results even though an hour of microscopic search has not demonstrated a single trypanosome in peripheral blood (table 1).

The agglutination test is valuable and of diagnostic significance (*13*).

The microscopic pathology, when positive for leishmania-like forms of trypanosomes in cardiac or other tissues, is also of diagnostic value (*2*, *3*, *5*, *8*). However, negative findings do not exclude *Tr. cruzi* infection.

The bite, the act of sucking the blood, by *Triatoma* naturally or experimentally infected with *Tr. cruzi* is not infective to experimental animals; it is only when the fecal excretion of an infected bug comes in contact with the injured skin or mucous membrane that infection may result. Therefore, persons who have been merely bitten by these insects may be expected to be free from *Tr. cruzi* infection. However, persons who have crushed the bugs on their skin, or rubbed the excretions of the insect into their eyes should be looked upon as possible cases of Chagas' disease.

SUMMARY

Natural infection of *Triatoma gerstakeri* ("blood sucking insect," "kissing bug") with *Trypanosoma cruzi* has been demonstrated in insects collected in Texas.

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DISABLING MORBIDITY AMONG INDUSTRIAL WORKERS, FIRST QUARTER OF 1939[1]

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The material presented in this paper is based on reports from 26 industrial sick benefit organizations whose memberships include over 170,000 male workers. The different cooperating plants are located in Pennsylvania, Illinois, Massachusetts, Connecticut, New York, Ohio, Maine, South Dakota, New Jersey, and Canada. The data presented deal with the frequency of sickness and nonindustrial injuries causing disability lasting more than one week.

An examination of table 1 as a whole shows that with respect to all sickness and nonindustrial injuries the rate for the first quarter of 1939 (123.5) is 25 percent above the corresponding rate for 1938 (99.1) and 16 percent below that for 1937 (147.1). The increase during the first quarter of 1939 over this period in 1938 was apparently caused by the relatively high rate of respiratory diseases, principally influenza and grippe, which occurred at the rate of 40.0 cases per 1,000 workers. Of interest also is the decrease in the rate for hernia from 1.9 cases per 1,000 in 1938 to 1.2 in 1939, a decrease of over one-third.

[1] From the Division of Industrial Hygiene, National Institute of Health. For the reports for the third and fourth quarters of 1938 and the entire year, see PUBLIC HEALTH REPORTS for April 28, 1939 (54: 691-695).

TABLE 1.—*Frequency of disabling cases of sickness and nonindustrial injuries lasting 8 consecutive calendar days or longer among* MALE *employees in various industries, by cause; the first quarter of 1939 compared with the first quarters of 1938 and 1937* [1]

Cause (Numbers in parentheses are disease title numbers from the International List of the Causes of Death, 1929)	Annual number of cases per 1,000 men		
	1939	1938	1937
Sickness and nonindustrial injuries [2]	123.5	99.1	147.1
Nonindustrial injuries (163–198)	9.5	10.8	10.1
Sickness	114.0	88.3	137.0
Respiratory diseases	65.4	39.1	87.5
Influenza and grippe (11)	40.0	16.8	60.9
Bronchitis, acute and chronic (106)	6.6	6.2	7.5
Diseases of the pharynx and tonsils (115a)	5.5	5.5	5.9
Pneumonia, all forms (107–109)	4.6	3.1	4.5
Tuberculosis of the respiratory system (23)	.7	.9	.8
Other respiratory diseases (104, 105, 110–114)	8.0	6.6	7.9
Nonrespiratory diseases	46.1	46.9	45.9
Digestive diseases	13.8	13.5	13.5
Diseases of the stomach, except cancer (117, 118)	3.4	3.9	3.9
Diarrhea and enteritis (120)	1.1	.7	.8
Appendicitis (121)	4.5	4.3	4.5
Hernia (122a)	1.2	1.0	1.5
Other digestive diseases (115b, 116, 122b–129)	3.6	2.7	2.8
Nondigestive diseases	32.3	33.4	32.4
Diseases of the heart and arteries, and nephritis (90–99, 102, 130–132)	4.9	4.8	5.0
Other genitourinary diseases (133–138)	2.5	2.7	2.1
Neuralgia, neuritis, sciatica (87a)	2.3	2.7	2.6
Neurasthenia and the like (part of 87b)	1.0	.9	.8
Other diseases of the nervous system (78–85, part of 87b)	1.0	1.5	.8
Rheumatism, acute and chronic (56, 57)	4.3	4.4	4.4
Diseases of the organs of locomotion, except diseases of the joints (156b)	3.0	2.8	2.7
Diseases of the skin (151–153)	2.7	3.0	3.1
Infectious and parasitic diseases (1–10, 12–22, 24–33, 36–44)	2.9	2.8	3.9
All other diseases (45–55, 58–77, 88, 89, 100, 101, 103, 154–156a, 157, 162)	7.7	7.8	7.0
Ill-defined and unknown causes (200)	2.5	2.3	8.6
Average number of males covered in the record	170,541	172,257	176,209
Number of organizations	26	26	26

[1] The same organizations are included in 1939, 1938, and 1937.
[2] Industrial injuries, venereal diseases, and a few numerically unimportant causes of disability are not reported.

FIRST QUARTERS OF THE YEARS 1930–39

Since interest at this time centers round the respiratory diseases and hernia, it is desirable to examine the position of the rates for these diagnoses in relation to the corresponding rates for the first quarters of previous years. For this purpose a 10-year period has been selected. The pertinent frequencies are given in table 2, and shown graphically in figure 1.

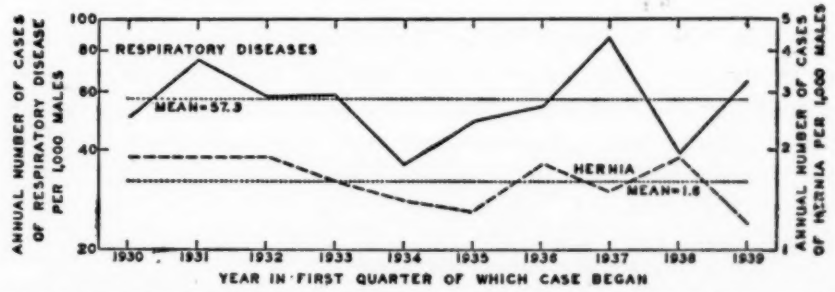

FIGURE 1.—Frequency (logarithmic) of disability lasting 8 consecutive calendar days or longer caused by respiratory diseases and hernia for the first quarters of 1930–39, inclusive. (Male morbidity experience of industrial companies which reported their cases to the United States Public Health Service.)

tinued for approximately 2 weeks, gradually decreasing in severity. He recovered completely.

Mr. and Mrs. G. W. lived alone in Westmoreland, Sumner County, Tenn. In the summer of 1938, Mrs. G. W. canned several quarts of beans and two quarts of okra. The beans were grown a few miles from her house, the okra in her home garden. In preparing these vegetables for canning, Mrs. G. W. boiled the beans for 2½ hours. They were then put into jars and heated for an additional 30 minutes. Then the jars were sealed. The okra was boiled for 30 minutes and was then placed in jars and sealed without further heating.

Jars of beans were opened and the contents eaten from time to time without ill effects. In January 1939, a daughter came to visit Mrs. G. W. and one of the jars of okra was opened. The daughter noted an offensive odor and the okra was discarded. Mrs. G. W. was not impressed by the odor. Her sense of smell was poor, presumably as a result of protracted chronic sinusitis.

On February 13, 1939, Mrs. G. W. opened the second can of okra and a jar of beans. The beans and okra were mixed, warmed, and served. Her husband noted that the mixture had a disagreeable odor, as though it had been scorched. However, both ate bountifully of the bean and okra mixture. Within 30 minutes, Mr. G. W. became nauseated and vomited profusely. Following the attack he took several drams of paregoric. His wife remained free from symptoms of any kind until the next day. No alcoholic beverages had been taken by either of them for more than a week preceding this meal. Mr. and Mrs. G. W. became ill with symptoms characteristic of botulism approximately 24 hours after eating the bean and okra mixture.

The jar which had contained the okra was found and specimens of okra and fluid were recovered from it. The jar which contained the beans had been discarded; however, another jar of the same lot was obtained for examination.

The specimens of the beans and okra were examined by the Division of Laboratories of the Tennessee Department of Public Health. A growth of *Cl. botulinum* was obtained from the okra. By means of protection tests with specific antitoxins, the organism was identified as *Cl. botulinum*, type B. No growth was obtained from the specimen of beans, and animal inoculations were not carried out with extracts of the beans.

Portions of the beans and okra were sent for bacteriological examination to the National Institute of Health of the United States Public Health Service. Examination there revealed that type B *Cl. botulinum* toxin was present in both specimens. Apparently the toxin in the beans was less concentrated than that in the okra, since symptoms in animals inoculated with the former developed much more slowly than was the case following inoculation with the latter.

A specimen of blood obtained from Mr. G. W. was sent to the National Institute of Health for botulinus antitoxin titration. No antitoxin was demonstrated.

DISCUSSION

Prior to 1928 botulism was not on the list of reportable diseases in Tennessee. In that year regulations governing communicable diseases were revised and botulism was made reportable. From 1928 through 1938, 13 cases of the disease were recorded, 9 cases being reported in 1932, 3 cases in 1933, and 1 in 1937.

No information is available regarding 2 of the cases reported in 1932. The other cases reported in that year occurred in Blount County (*1*). They resulted from the ingestion of a vegetable soup prepared from home-canned vegetables. Apparently no attempt was made to confirm the diagnosis by laboratory procedures. Three cases, with 2 deaths and 1 recovery, were reported from Unicoi County (*2*) in 1933. This outbreak resulted from eating home-dried beans. The variety of bean is not stated in the record and no determination was made of the type of toxin involved.

A mild case of botulism, in which recovery ensued, was observed in the Vanderbilt University Hospital in 1937. The patient was from Overton County. The contaminated material was not determined.

The first recognized outbreak of botulism in Tennessee occurred in Memphis in February 1920,[3] and was not reported to the Tennessee Department of Public Health. Seven cases with 7 deaths resulted from eating commercially canned ripe olives. This outbreak was one of 6 (*3*) which occurred in the United States. All were attributed to ripe olives which had been canned in California. *Cl. botulinum*, type A, was recovered from a specimen of the olives (*3*, *4*) which caused the Memphis outbreak.

SUMMARY

1. Twenty cases of botulism in Tennessee which occurred prior to 1939 are reviewed.

2. Two cases of botulism due to the toxin of *Cl. botulinum*, type B, are reported. Home-canned okra and possibly home-canned beans were the foods responsible for the outbreak.

3. This is the first recorded instance of the demonstration in Tennessee of *Cl. botulinum* toxin in home-canned vegetables.

4. *Cl. botulinum*, type B, is reported for the first time as a cause of botulism in Tennessee.

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[3] Personal communication from Dr. L. M. Graves, Superintendent of Health, Memphis, Tennessee.

ACKNOWLEDGMENTS

The authors are indebted to the National Institute of Health for cooperation and assistance in making the bacteriological diagnosis and serological titrations, and for supplying botulinus antitoxin for typing purposes.

They also wish to express appreciation for the contributions which were made by Doctor A. E. Keller of the Department of Preventive Medicine and Public Health of Vanderbilt University School of Medicine and by Mr. W. H. Gaub, director of laboratories of the Tennessee Department of Public Health.

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COURT DECISION ON PUBLIC HEALTH

Power of town board of health as to employment of agent.—(Massachusetts Supreme Judicial Court; *Breault* v. *Town of Auburn*, 22 N. E. 2d 46; decided June 30, 1939.) On January 2, 1935, the plaintiff entered into a written contract with the board of health of the defendant town to act as the board's full time agent for the year 1935. On February 26, 1935, the board of health voted to dispense with the plaintiff's services from a date 2 weeks thereafter. The services of plaintiff were dispensed with in strict accordance with the terms of the contract, among which was a provision that "The employment shall terminate only after due notice of either party given in writing * * *." Thereafter at a town meeting it was voted to ratify the contract, to rescind its provisions relative to termination of the employment, and to instruct and direct the board of health to employ the plaintiff as full-time agent for the balance of the year. The board of health refused to recognize this action of the town meeting. In an action brought by the plaintiff against the town the supreme court cited a statute under which the board of health was empowered to "employ the necessary officers, agents, and assistants to execute the health laws and its regulations" and to "fix the salary or other compensation of such * * * agents and assistants", and stated that "The attempts of the defendant to ratify the contract entered into between the plaintiff and the board of health and to direct the employ-

ment of the plaintiff by the board were ineffective." Continuing, the court said:

In their conduct with relation to the contract of employment of the plaintiff and in dispensing with his services under and in accordance with its terms, the members of the board were exercising powers conferred upon them by the legislature and were acting as public officers and not as agents of the town. [Cases cited.] While the word "may" is used in said section 27, we think that the power therein conferred, although leaving much to the board's discretion, is one which is vested exclusively in the board and is to be exercised without reference to the approval or disapproval of the defendant. [Cases cited.] In the exercise of the statutory authority conferred on the members of the board by section 27, no relation of agency existed between them and the defendant. "A municipality can exercise no direction or control over one whose duties have been defined by the legislature." * * *

It follows that the defendant could not legally instruct the members of the board as it sought to do by the vote of March 19, 1935, and could exercise no direction or control over them as to the selection of an agent whom, by the provisions of section 27, they were authorized to choose for themselves. * * *

DEATHS DURING WEEK ENDED AUGUST 5, 1939

[From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce]

	Week ended Aug. 5, 1939	Corresponding week, 1938
Data from 88 large cities of the United States:		
Total deaths	7,114	7,266
Average for 3 prior years	[1] 7,178	
Total deaths, first 31 weeks of year	265,779	258,521
Deaths under 1 year of age	412	541
Average for 3 prior years	[1] 506	
Deaths under 1 year of age, first 31 weeks of year	15,796	16,489
Data from industrial insurance companies:		
Policies in force	66,862,304	68,976,881
Number of death claims	10,339	11,017
Death claims per 1,000 policies in force, annual rate	8.1	8.3
Death claims per 1,000 policies, first 31 weeks of year, annual rate	10.6	9.5

[1] Data for 86 cities.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers.

In these and the following tables, a zero (0) indicates a positive report and has the same significance as any other figure, while leaders (.....) represent no report, with the implication that cases or deaths may have occurred but were not reported to the State health officer.

Cases of certain diseases reported by telegraph by State health officers for the week ended Aug. 12, 1939, rates per 100,000 population (annual basis), and comparison with corresponding week of 1938 and 5-year median

Division and State	Diphtheria				Influenza				Measles			
	Aug. 12, 1939, rate	Aug. 12, 1939, cases	Aug. 13, 1938, cases	1934–38, median	Aug. 12, 1939, rate	Aug. 12, 1939, cases	Aug. 13, 1938, cases	1934–38, median	Aug. 12, 1939, rate	Aug. 12, 1939, cases	Aug. 13, 1938, cases	1934–38, median
NEW ENG.												
Maine	0	0	0	0	.....	.....	11	.....	30	5	1	4
New Hampshire	0	0	0	0	.....	.....	.....	.....	30	3	.....	1
Vermont	0	0	0	0	.....	.....	.....	.....	134	10	2	2
Massachusetts	4	3	3	7	.....	.....	.....	.....	59	50	88	32
Rhode Island	0	0	0	0	.....	.....	.....	.....	183	24	1	1
Connecticut	3	1	0	2	.....	.....	.....	.....	56	19	6	16
MID. ATL.												
New York	4	11	9	12	[1] 3	[1] 4	(1)	[1] 4	52	130	202	202
New Jersey	5	4	1	6	1	1	3	3	17	14	33	41
Pennsylvania	9	17	16	16	.....	.....	.....	.....	21	42	150	150
E. NO. CEN.												
Ohio	2	3	36	12	5	7	.....	4	12	16	58	65
Indiana	7	5	5	8	3	2	9	9	1	1	12	12
Illinois	15	23	13	14	3	4	2	4	10	15	30	66
Michigan [2]	6	6	12	12	.....	.....	.....	.....	41	39	123	60
Wisconsin	4	2	1	2	.....	.....	14	14	79	45	134	134
W. NO. CEN.												
Minnesota	2	1	2	2	.....	.....	3	1	21	11	30	5
Iowa	8	4	2	3	2	1	2	2	43	21	21	5
Missouri	0	0	5	15	.....	.....	14	25	0	0	4	13
North Dakota	22	3	0	2	.....	.....	.....	.....	15	2	22	11
South Dakota	8	1	2	1	8	1	.....	.....	23	3	.....	2
Nebraska	0	0	1	4	.....	.....	.....	.....	0	0	.....	3
Kansas	8	3	3	5	.....	.....	6	1	8	3	7	6

See footnotes at end of table.

Cases of certain diseases reported by telegraph by State health officers for the week ended Aug. 12, 1939, rates per 100,000 population (annual basis), and comparison with corresponding week of 1938 and 5-year median—Continued

Division and State	Diphtheria				Influenza				Measles			
	Aug. 12, 1939, rate	Aug. 12, 1939, cases	Aug. 13, 1938, cases	1934–38, median	Aug. 12, 1939, rate	Aug. 12, 1939, cases	Aug. 13, 1938, cases	1934–38, median	Aug. 12, 1939, rate	Aug. 12, 1939, cases	Aug. 13, 1938, cases	1934–38, median
SO. ATL.												
Delaware	0	0	0	0	----	----	----	----	0	0	----	2
Maryland [3]	3	1	3	3	----	----	6	2	19	6	6	8
Dist. of Col. [3]	16	2	3	3	----	----	----	----	65	8	3	3
Virginia	47	25	22	10	56	30	----	----	36	19	33	31
West Virginia	13	5	5	5	11	4	7	12	8	3	1	4
North Carolina [3]	39	27	25	18	----	----	----	----	19	13	82	27
South Carolina [3]	30	11	12	4	331	121	71	54	3	1	15	8
Georgia [3]	33	20	27	8	----	----	----	----	10	6	----	0
Florida [3]	6	2	4	6	15	5	1	1	6	2	----	2
E. SO. CEN.												
Kentucky	24	14	11	10	3	2	1	----	0	0	4	14
Tennessee	12	7	18	8	16	9	6	7	11	6	19	15
Alabama [3]	30	17	12	12	37	21	12	3	7	4	3	4
Mississippi [2 3]	33	13	7	12	----	----	----	----	0	0	----	0
W. SO. CEN.												
Arkansas	17	7	9	8	27	11	18	4	0	0	4	3
Louisiana [3]	5	2	11	11	17	7	20	6	10	4	13	4
Oklahoma	8	4	2	4	20	10	17	11	4	2	4	4
Texas [3]	13	16	39	33	19	23	96	39	6	7	21	39
MOUNTAIN												
Montana	0	0	0	1	----	----	----	----	159	17	23	8
Idaho	0	0	0	0	----	----	4	----	10	1	6	4
Wyoming	22	1	0	0	----	----	----	----	196	9	1	4
Colorado [4]	63	13	14	3	19	4	----	----	39	8	10	10
New Mexico	0	0	3	1	----	----	----	1	0	0	5	5
Arizona	12	1	3	1	86	7	22	7	49	4	11	3
Utah [2]	0	0	0	0	----	----	5	----	60	6	22	4
PACIFIC												
Washington	9	3	0	0	----	----	1	----	299	97	12	12
Oregon	0	0	1	1	5	1	6	4	94	19	11	7
California	16	19	10	17	3	4	5	5	93	113	138	67
Total	12	297	352	351	13	279	362	268	33	808	1,371	1,336
32 weeks	15	11,789	14,089	14,796	223	151,299	15,734	103,767	439	347,849	759,641	667,139

Division and State	Meningitis, meningococcus				Poliomyelitis				Scarlet fever			
	Aug. 12, 1939, rate	Aug. 12, 1939, cases	Aug. 13, 1938, cases	1934–38, median	Aug. 12, 1939, rate	Aug. 12, 1939, cases	Aug. 13, 1938, cases	1934–38, median	Aug. 12, 1939, rate	Aug. 12, 1939, cases	Aug. 13, 1938, cases	1934–38, median
NEW ENG.												
Maine	0	----	1	0	0	0	0	1	12	2	2	4
New Hampshire	0	0	0	0	0	0	0	0	10	1	0	1
Vermont	0	0	0	0	13	1	0	0	13	1	0	0
Massachusetts	2.4	2	0	0	5	4	0	6	24	20	23	35
Rhode Island	0	0	0	0	8	1	0	0	0	0	3	3
Connecticut	0	0	1	1	9	3	1	1	9	3	3	6
MID. ATL.												
New York	1.2	3	3	3	4	11	9	9	28	71	58	100
New Jersey	0	0	0	1	4	3	4	6	17	14	13	14
Pennsylvania	2	4	1	5	4	7	1	8	25	50	42	74

See footnotes at end of table.

Cases of certain diseases reported by telegraph by State health officers for the week ended Aug. 12, 1939, rates per 100,000 population (annual basis), and comparison with corresponding week of 1938 and 5-year median—Continued

Division and State	Meningitis, meningococcus				Poliomyelitis				Scarlet fever			
	Aug. 12, 1939, rate	Aug. 12, 1939, cases	Aug. 13, 1938, cases	1934–38, median	Aug. 12, 1939, rate	Aug. 12, 1939, cases	Aug. 13, 1938, cases	1934–38, median	Aug. 12, 1939, rate	Aug. 12, 1939, cases	Aug. 13, 1938, cases	1934–38, median
E. NO. CEN.												
Ohio	0.8	1	2	2	7	9	1	4	47	61	82	77
Indiana	0	0	2	2	1.5	1	0	1	36	24	22	22
Illinois	0	0	1	3	3	5	8	11	34	52	64	90
Michigan [2]	1.1	1	0	0	82	78	2	4	76	72	78	76
Wisconsin	0	0	1	0	5	3	2	2	53	30	31	31
W. NO. CEN.												
Minnesota	0	0	0	0	45	23	4	1	43	22	13	19
Iowa	2	1	2	2	2	1	2	1	6	3	9	10
Missouri	0	0	0	0	1.3	1	0	1	17	13	16	15
North Dakota	7	1	0	0	7	1	2	0	80	11	5	4
South Dakota	0	0	0	0	0	0	2	0	98	13	5	5
Nebraska	0	0	0	0	8	2	0	0	46	12	2	3
Kansas	0	0	0	0	17	6	0	2	67	24	35	21
SO. ATL.												
Delaware	0	0	0	0	0	0	0	0	0	0	1	1
Maryland [2]	3	1	1	2	0	0	1	2	49	16	8	10
Dist. of Col. [2]	0	0	1	0	0	0	2	1	40	5	2	2
Virginia	0	0	1	1	4	2	2	4	15	8	13	13
West Virginia	0	0	1	1	0	0	1	2	32	12	14	14
North Carolina [2]	1.5	1	4	1	10	7	2	4	47	32	25	21
South Carolina [2]	2.7	1	0	0	38	14	2	2	25	9	1	2
Georgia [2]	1.7	1	0	0	5	3	0	0	13	8	6	5
Florida [2]	0	0	0	0	6	2	2	2	6	2	1	2
E. SO. CEN.												
Kentucky	1.7	1	2	2	10	6	2	2	35	20	17	15
Tennessee	4	2	2	1	0	0	0	1	25	14	15	8
Alabama [2]	5	3	0	1	4	2	2	3	26	15	13	8
Mississippi [2,3]	2.5	1	1	0	5	2	0	0	8	3	3	5
W. SO. CEN.												
Arkansas	0	0	2	1	0	0	0	0	20	8	11	5
Louisiana [2]	0	0	2	0	0	0	1	1	12	5	3	4
Oklahoma	0	0	0	0	4	2	1	1	8	4	8	8
Texas [2]	2.5	3	3	1	.8	1	0	1	10	12	53	34
MOUNTAIN												
Montana	0	0	0	0	0	0	1	1	28	3	7	6
Idaho	10	1	1	0	0	0	0	0	0	0	1	3
Wyoming	0	0	0	0	0	0	0	0	0	0	2	2
Colorado [4]	0	0	0	1	14	3	1	1	98	20	12	12
New Mexico	0	0	0	0	25	2	0	0	62	5	5	3
Arizona	12	1	0	0	49	4	0	0	25	2	1	1
Utah	0	0	0	0	0	0	0	0	20	2	8	7
PACIFIC												
Washington	0	0	1	0	0	0	0	1	28	9	8	15
Oregon	5	1	0	0	0	0	0	1	35	7	8	8
California	1.6	2	6	3	42	51	5	20	32	39	46	53
Total	1.3	32	42	60	10	261	63	299	30	759	798	878
32 weeks	1.7	1,353	2,114	4,087	2.2	1,805	857	2,801	144	115,792	136,453	164,040

See footnotes at end of table.

Cases of certain diseases reported by telegraph by State health officers for the week ended Aug. 12, 1939, rates per 100,000 population (annual basis), and comparison with corresponding week of 1938 and 5-year median—Continued

Division and State	Smallpox				Typhoid and paratyphoid fever				Whooping cough		
	Aug. 12, 1939, rate	Aug. 12, 1939, cases	Aug. 13, 1938, cases	1934–38, median	Aug. 12, 1939, rate	Aug. 12, 1939, cases	Aug. 13, 1938, cases	1934–38, median	Aug. 12, 1939, rate	Aug. 12, 1939, cases	Aug. 13, 1938, cases
NEW ENG.											
Maine	0	0	0	0	18	3	3	1	91	15	32
New Hampshire	0	0	0	0	0	0	1	1	0	0	----
Vermont	0	0	0	0	13	1	2	0	161	12	33
Massachusetts	0	0	0	0	1	1	0	4	91	77	91
Rhode Island	0	0	0	0	15	2	0	0	92	12	30
Connecticut	0	0	0	0	9	3	1	1	169	57	74
MID. ATL.											
New York	0	0	0	0	4	10	26	26	157	391	669
New Jersey	0	0	0	0	7	6	2	6	214	180	268
Pennsylvania	0	0	0	0	13	25	14	22	197	388	254
E. NO. CEN.											
Ohio	1	1	0	0	12	16	28	28	198	257	391
Indiana	0	0	4	1	12	8	6	7	74	50	10
Illinois	1	2	5	1	23	35	37	37	195	298	483
Michigan [2]	2	2	4	0	21	20	12	12	262	248	488
Wisconsin	0	0	0	3	2	1	2	2	334	190	460
W. NO. CEN.											
Minnesota	0	0	3	1	4	2	0	1	56	29	70
Iowa	4	2	4	4	2	1	12	6	20	10	27
Missouri	0	0	4	1	18	14	16	30	41	32	18
North Dakota	0	0	4	0	0	0	0	1	73	10	48
South Dakota	8	1	2	1	15	2	0	0	23	3	8
Nebraska	4	1	3	0	8	2	1	0	50	13	16
Kansas	3	1	0	0	11	4	8	10	39	14	46
SO. ATL.											
Delaware	0	0	0	0	39	2	2	1	138	7	3
Maryland [2]	0	0	0	0	37	12	14	15	176	57	36
Dist. of Col. [2]	0	0	0	0	16	2	3	2	364	45	11
Virginia	0	0	0	0	43	23	17	35	186	99	67
West Virginia	0	0	0	0	59	22	22	26	22	8	35
North Carolina [4]	0	0	0	0	19	13	12	30	130	89	250
South Carolina [3]	0	0	0	0	41	15	27	20	96	35	70
Georgia [3]	0	0	0	0	60	36	26	26	13	8	34
Florida [3]	0	0	0	0	15	5	2	1	9	3	12
E. SO. CEN.											
Kentucky	0	0	0	0	75	43	54	50	75	43	108
Tennessee	2	1	1	0	62	35	28	40	26	15	44
Alabama [3]	0	0	0	0	21	12	18	26	37	21	22
Mississippi [2 3]	0	0	0	0	18	7	6	13	----	----	----
W. SO. CEN.											
Arkansas	0	0	0	0	50	20	24	24	35	14	5
Louisiana [3]	0	0	0	0	53	22	19	19	104	43	47
Oklahoma	0	0	1	0	30	15	21	44	2	1	5
Texas [3]	0	0	0	1	41	49	105	87	48	58	256
MOUNTAIN											
Montana	0	0	0	0	9	1	1	3	94	10	60
Idaho	0	0	0	0	20	2	1	1	31	3	2
Wyoming	22	1	0	0	22	1	2	0	0	0	2
Colorado [4]	0	0	4	0	10	2	5	2	106	22	45
New Mexico	12	1	0	0	25	2	6	7	111	9	8
Arizona	0	0	0	0	12	1	3	3	74	6	22
Utah [3]	0	0	0	1	10	1	0	1	834	84	37
PACIFIC											
Washington	0	0	7	2	0	0	8	3	40	13	50
Oregon	0	0	11	1	15	3	3	3	129	26	20
California	7	9	3	3	3	4	8	15	75	91	167
Total	1	22	60	33	20	506	608	730	125	3,096	4,934
32 weeks	11	8,632	12,663	6,026	8	6,602	7,588	7,588	157	123,958	139,834

[1] New York City only.
[2] Period ended earlier than Saturday.
[3] Typhus fever, week ended Aug. 12, 1939, 102 cases as follows: District of Columbia, 1; North Carolina, 4; South Carolina, 9; Georgia, 45; Florida, 3; Alabama, 13; Mississippi, 3; Louisiana, 1; Texas, 23.
[4] Psittacosis, week ended Aug. 12, 1939, Colorado, 1 case.

ROCKY MOUNTAIN SPOTTED FEVER

Cases reported by States, Feb. 26 to Aug. 19, 1939

State	Feb. 26 to Mar. 25	Mar. 26 to Apr. 22	Apr. 23 to May 20	May 21 to June 17	June 18 to July 15	July 16 to Aug. 12	Week ended Aug. 19
Eastern:							
New York				3	3	1	
New Jersey				4	8	7	6
Pennsylvania				6	3	4	
Delaware				3			1
Maryland			7	13	11	23	2
District of Columbia			2	2	2	3	1
Virginia			1	13	10	11	2
West Virginia						1	
North Carolina				3	13	13	3
Georgia					1	1	
Central:							
Ohio				3	2	4	
Indiana				2	1	3	2
Illinois			1	1	5	7	1
Kentucky							3
Tennessee					5	5	4
Iowa			1	10	9	6	1
Missouri				1		4	
Western:							
Montana	[1] 2	2	8	5	1	2	
Idaho		4	7	4	5		
Wyoming		3	14	16	5	5	
Colorado		2	3	9	4		
Utah		2	5	5	6	2	
Washington		2	3	2			
Oregon		9	16	7	2	1	

[1] 1 other case was reported in Montana as occurring in February, exact date not given.

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of cases reported monthly by States is published weekly and covers only those States from which reports are received during the current week.

State	Diphtheria	Influenza	Malaria	Measles	Meningitis, meningococcus	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid and paratyphoid fever
June 1939										
Alaska	1	12		79	0		0	4	1	1
July 1939										
California	88	44	56	1,591	4	7	157	250	45	39
Idaho	1			12	0		0	4	5	3
Florida	15	23	76	60	3	23	11	16	0	15
Wyoming	2	1		61	0		1	11	4	2

Summary of monthly reports from States—Continued

July 1939

	Cases
Anthrax:	
California	1
Chickenpox:	
California	542
Idaho	7
Florida	18
Wyoming	2
Colorado tick fever:	
Wyoming	4
Dysentery:	
California (amoebic)	17
California (bacillary)	59
Florida (amoebic)	2
Florida (bacillary)	1
Encephalitis, epidemic or lethargic:	
California	10
Florida	2
Food poisoning:	
California	205
German measles:	
California	41
Idaho	1
Granuloma, coccidioidal:	
California	8
Hookworm:	
Florida	369
Jaundice, epidemic:	
California	2
Idaho	1

July 1939—Continued

	Cases
Leprosy:	
California	2
Lead poisoning:	
Idaho	1
Mumps:	
California	703
Idaho	2
Florida	61
Wyoming	47
Ophthalmia neonatorum:	
California	1
Psittacosis:	
California	1
Rabies in animals:	
California	27
Idaho	1
Florida	4
Relapsing fever:	
California	5
Rocky Mountain spotted fever:	
Idaho	2
Wyoming	4
Septic sore throat:	
California	4
Idaho	3
Florida	6
Wyoming	2

July 1939—Continued

	Cases
Tetanus:	
California	8
Florida	1
Trachoma:	
California	41
Trichinosis:	
California	3
Idaho	1
Tularaemia:	
California	3
Wyoming	2
Typhus fever:	
California	1
Florida	21
Undulant fever:	
California	31
Idaho	8
Florida	10
Wyoming	3
Vincent's infection:	
Idaho	1
Florida	12
Wyoming	1
Whooping cough:	
California	470
Idaho	15
Florida	90
Wyoming	6

PLAGUE INFECTION IN FLEAS FROM GROUND SQUIRRELS IN BEAVERHEAD COUNTY, MONT.

Under date of August 7, 1939, Surgeon L. B. Byington reported plague infection proved in a lot of 70 fleas from 64 ground squirrels, *C. columbianus*, shot July 17, 15 miles north of Wisdom, Beaverhead County, Mont.

CASES OF VENEREAL DISEASES REPORTED FOR JUNE 1939

These reports are published monthly for the information of health officers in order to furnish current data as to the prevalence of the venereal diseases. The figures are taken from reports received from State and city health officers. They are preliminary and are therefore subject to correction. It is hoped that the publication of these reports will stimulate more complete reporting of these diseases.

Reports from States

	Syphilis		Gonorrhea	
	Cases reported during month	Monthly case rates per 10,000 population	Cases reported during month	Monthly case rates per 10,000 population
Alabama	1,620	5.60	264	0.91
Arizona	174	4.22	153	3.71
Arkansas	912	4.45	247	1.21
California	1,774	2.88	1,139	1.85
Colorado	113	1.06	73	.68
Connecticut	225	1.29	88	.51
Delaware	165	6.32	49	1.88
District of Columbia	422	6.73	260	4.15
Florida	1,025	6.14	97	.58
Georgia	1,559	5.05	64	.21
Idaho	14	.28	20	.41
Illinois	2,624	3.33	1,362	1.73
Indiana	604	1.74	83	.24
Iowa	242	.95	163	.64
Kansas	302	1.62	108	.58
Kentucky	749	2.57	299	1.02
Louisiana	601	2.82	88	.41
Maine	41	.48	40	.47
Maryland	923	5.50	281	1.67
Massachusetts	417	.94	415	.94
Michigan	1,417	2.93	601	1.24

See footnotes at end of table.

Cases of venereal diseases reported for June 1939—Continued

Reports from States—Continued

	Syphilis		Gonorrhea	
	Cases reported during month	Monthly case rates per 10,000 population	Cases reported during month	Monthly case rates per 10,000 population
Minnesota	245	0.92	189	0.71
Mississippi	2,363	11.68	2,643	13.06
Missouri	1,415	3.55	234	.59
Montana	52	.96	25	.46
Nebraska	56	.41	60	.44
Nevada	34	3.37	16	1.58
New Hampshire	15	.29	5	.10
New Jersey	848	1.95	234	.54
New Mexico	113	2.68	28	.66
New York	5,183	4.00	2,226	1.72
North Carolina	1,874	5.37	322	.92
North Dakota	36	.51	30	.42
Ohio	1,019	1.51	315	.47
Oklahoma	796	3.12	243	.95
Oregon	159	1.55	140	1.36
Pennsylvania	1,196	1.18	158	.16
Rhode Island	132	1.94	52	.76
South Carolina	1,115	5.95	302	1.61
South Dakota	16	.23	18	.26
Tennessee	1,062	3.67	408	1.41
Texas	4,267	6.91	945	1.53
Utah	13	.25	9	.17
Vermont	12	.31	7	.18
Virginia	1,692	6.25	283	1.05
Washington	227	1.37	240	1.45
West Virginia	6,302	33.79	619	3.32
Wisconsin	80	.27	90	.31
Wyoming	11	.47	4	.17
Total	46,256	3.58	15,739	1.22

Reports from cities with populations of 200,000 or over

Atlanta, Ga	385	12.82	73	2.43
Baltimore, Md	632	7.57	198	2.37
Birmingham, Ala	305	1.04	32	.11
Boston, Mass	164	2.06	169	2.12
Buffalo, N. Y	140	2.33	47	.78
Chicago, Ill	1,754	4.79	913	2.49
Cincinnati, Ohio	156	3.30	67	1.42
Cleveland, Ohio	286	3.03	114	1.21
Columbus, Ohio	115	3.67	11	.35
Dallas, Tex	284	9.34	129	4.24
Denver, Colo	68	2.26	50	1.66
Detroit, Mich	861	4.74	318	1.75
Houston, Tex	333	9.29	156	4.35
Indianapolis, Ind	36	.93	43	1.12
Kansas City, Mo	115	2.66	32	.74
Louisville, Ky	235	6.93	60	1.77
Memphis, Tenn	298	10.20	100	3.42
Minneapolis, Minn	60	1.20	52	1.04
Newark, N. J	331	7.29	121	2.66
New York, N. Y	3,907	5.22	1,760	2.35
Oakland, Calif	36	1.15	26	.83
Omaha, Nebr	31	1.39	21	.94
Philadelphia, Pa	394	1.96		
Pittsburgh, Pa	350	4.97	31	.44
Portland, Oreg	84	2.62	43	1.34
Rochester, N. Y	31	.91	33	.96
St. Louis, Mo	922	10.94	127	1.51
St. Paul, Minn	33	1.15	19	.66
San Francisco, Calif	217	3.15	185	2.68
Seattle, Wash	104	2.69	137	3.54
Syracuse, N. Y	113	5.01	12	.53
Washington, D. C	422	6.73	260	4.15

No reports received from Akron, Dayton, Jersey City, Los Angeles, Milwaukee, New Orleans, Providence, San Antonio, and Toledo.

WEEKLY REPORTS FROM CITIES

City reports for week ended Aug. 5, 1939

This table summarizes the reports received weekly from a selected list of 140 cities for the purpose of showing a cross section of the current urban incidence of the communicable diseases listed in the table.

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Data for 90 cities:											
5-year average	91	31	11	517	292	280	4	356	78	1,411	----
Current week [1]	58	20	7	264	212	208	0	294	42	1,377	----
Maine:											
Portland	0	----	0	0	2	1	0	0	0	6	21
New Hampshire:											
Concord	0	----	0	0	0	0	0	0	1	0	7
Manchester	0	----	0	0	0	1	0	0	0	0	8
Nashua	0	----	0	0	0	0	0	0	0	0	3
Vermont:											
Barre	----	----	----	----	----	----	----	----	----	----	----
Burlington	0	----	0	0	0	0	0	0	0	1	5
Rutland	0	----	0	0	0	0	0	0	0	0	2
Massachusetts:											
Boston	1	----	0	24	4	9	0	5	0	26	160
Fall River	0	----	0	0	1	0	0	3	0	3	31
Springfield	0	----	0	0	1	0	0	1	0	2	33
Worcester	0	----	0	3	4	0	0	2	0	19	32
Rhode Island:											
Pawtucket	0	----	0	0	0	0	0	0	0	0	16
Providence	0	----	0	18	1	2	0	3	0	11	65
Connecticut:											
Bridgeport	0	----	0	1	1	0	0	0	0	0	28
Hartford	0	----	0	0	1	0	0	1	0	11	34
New Haven	0	----	0	7	0	0	0	2	0	12	43
New York:											
Buffalo	1	----	0	5	9	3	0	3	0	13	134
New York	15	2	1	34	32	14	0	74	6	161	1,251
Rochester	1	----	0	3	1	1	0	1	0	5	52
Syracuse	0	----	0	8	1	2	0	0	0	77	36
New Jersey:											
Camden	0	----	0	0	1	2	0	0	2	1	23
Newark	0	----	0	0	1	1	0	2	0	47	68
Trenton	0	1	1	1	2	0	0	2	0	3	24
Pennsylvania:											
Philadelphia	3	1	0	13	8	8	0	19	3	129	396
Pittsburgh	0	1	0	0	11	2	0	4	3	8	129
Reading	0	----	0	0	0	1	0	3	0	0	17
Scranton	1	----	----	0	----	0	0	----	0	2	----
Ohio:											
Cincinnati	0	----	0	0	4	2	0	2	0	16	107
Cleveland	0	4	0	4	5	12	0	3	0	48	162
Columbus	----	----	----	----	----	----	----	----	----	----	----
Toledo	0	----	0	2	0	5	0	5	0	48	71
Indiana:											
Anderson	0	----	0	0	1	0	0	1	0	1	15
Fort Wayne	0	----	0	0	2	0	0	1	0	0	25
Indianapolis	3	----	0	0	3	6	0	4	2	63	99
Muncie	0	----	0	0	1	0	0	0	0	0	10
South Bend	0	----	0	0	0	2	0	0	0	4	14
Terre Haute	0	----	0	1	2	1	0	1	0	0	31
Illinois:											
Alton	0	----	0	0	1	0	0	0	0	0	5
Chicago	7	----	0	4	12	22	0	39	3	137	588
Elgin	0	----	0	0	0	0	0	0	0	8	14
Moline	0	----	0	0	0	1	0	0	0	2	4
Springfield	0	----	1	0	0	0	0	0	0	13	21
Michigan:											
Detroit	8	----	0	6	7	27	0	14	1	91	212
Flint	0	----	0	1	1	2	0	0	0	1	20
Grand Rapids	0	----	0	1	0	5	0	0	0	5	28
Wisconsin:											
Kenosha	0	----	0	0	0	1	0	0	0	2	7
Madison	0	----	0	1	0	0	0	0	0	23	10
Milwaukee	0	1	1	1	1	8	0	3	0	28	75
Racine	0	----	0	2	0	0	0	0	0	8	7
Superior	0	----	0	0	0	1	0	0	0	0	6

[1] Figures for Barre and Columbus estimated; reports not received.

City reports for week ended Aug. 5, 1939—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Minnesota:											
Duluth	0	----	0	2	0	5	0	0	0	1	10
Minneapolis	0	----	0	1	1	8	0	1	0	5	89
St. Paul	0	----	0	2	0	4	0	0	0	29	60
Iowa:											
Cedar Rapids	0	----	----	1	----	0	0	----	0	0	----
Des Moines	1	----	0	1	0	0	1	0	0	0	16
Sioux City	0	----	----	0	----	0	0	----	0	0	----
Waterloo	2	----	----	0	----	0	0	----	0	2	----
Missouri:											
Kansas City	0	----	0	1	7	1	0	1	1	0	67
St. Joseph	0	----	0	0	1	0	0	0	0	0	27
St. Louis	0	----	0	0	6	3	0	6	0	22	171
North Dakota:											
Fargo	0	----	0	0	0	1	0	0	0	0	2
Grand Forks	0	----	----	0	----	0	0	----	0	0	----
Minot	0	----	----	0	----	0	0	----	0	0	----
South Dakota:											
Aberdeen [1]	0	----	----	1	----	0	[1]0	----	0	0	----
Sioux Falls	0	----	0	0	0	4	0	0	0	0	8
Nebraska:											
Lincoln	0	----	----	0	----	1	0	0	----	1	----
Omaha	0	----	0	0	3	2	0	1	0	4	51
Kansas:											
Lawrence	0	----	0	0	0	0	0	0	0	0	7
Topeka	0	----	0	0	0	5	0	0	0	0	16
Wichita	0	----	0	1	1	0	0	0	1	2	14
Delaware:											
Wilmington	0	----	0	0	1	0	0	0	0	2	29
Maryland:											
Baltimore	0	1	1	1	4	2	0	12	0	49	171
Cumberland	0	----	0	0	0	0	0	0	0	1	8
Frederick	0	----	0	0	0	0	0	0	0	0	3
District of Columbia:											
Washington	0	----	0	5	6	5	0	1	0	29	147
Virginia:											
Lynchburg	3	----	0	3	1	0	0	0	0	38	14
Norfolk	0	----	0	0	1	1	0	1	1	1	29
Richmond	1	----	0	0	1	0	0	0	0	3	55
Roanoke	0	----	0	6	0	1	0	2	1	3	7
West Virginia:											
Charleston	0	----	0	0	1	0	0	0	1	0	12
Huntington	0	----	----	0	----	0	0	----	0	0	----
Wheeling	----	----	0	----	1	----	----	0	----	----	17
North Carolina:											
Gastonia	0	----	----	0	----	0	0	----	1	0	----
Raleigh	0	----	0	0	0	0	0	0	1	1	10
Wilmington	0	----	0	1	1	0	0	0	0	0	9
Winston-Salem	0	----	0	0	1	0	0	2	0	0	14
South Carolina:											
Charleston	0	4	0	0	0	0	0	0	0	1	24
Florence	0	----	----	0	----	0	0	----	0	0	10
Greenville	0	----	0	0	0	0	0	0	0	0	8
Georgia:											
Atlanta	0	1	0	0	3	6	0	8	0	2	67
Brunswick	0	----	0	0	0	0	0	0	0	0	4
Savannah	0	----	0	1	0	0	0	3	0	2	16
Florida:											
Miami	2	----	0	0	0	3	0	2	0	11	26
Tampa	0	----	0	3	1	0	0	1	1	0	29
Kentucky:											
Ashland	0	----	0	0	0	0	0	1	0	0	8
Covington	0	----	0	0	3	3	0	1	0	0	8
Lexington	0	----	0	1	0	2	0	2	2	0	17
Louisville	0	----	0	0	5	1	0	3	0	35	49
Tennessee:											
Knoxville	0	----	0	0	2	1	0	0	0	0	20
Memphis	0	----	0	0	0	2	0	2	0	22	71
Nashville	0	----	0	0	1	3	0	2	0	5	36
Alabama:											
Birmingham	0	2	0	0	3	5	0	6	0	3	83
Mobile	1	----	0	0	1	1	0	0	0	0	19
Montgomery	2	----	----	0	----	1	0	----	0	1	----
Arkansas:											
Fort Smith	0	----	----	1	----	0	0	----	1	0	----
Little Rock	0	----	0	0	2	0	0	1	1	3	4

[1] The number of cases of smallpox in Aberdeen, S. Dak., for the week ended July 1, 1939, PUBLIC HEALTH REPORTS, July 21, p. 1358, should have been given as 5 instead of 25.

City reports for week ended Aug. 5, 1939—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Louisiana:											
Lake Charles	0	------	0	0	0	0	0	0	0	0	7
New Orleans	3	1	1	0	11	5	0	11	1	91	160
Shreveport	0	------	0	0	4	0	0	0	0	1	39
Oklahoma:											
Oklahoma City	0	------	0	0	3	1	0	3	1	0	40
Texas:											
Dallas	1	------	0	0	1	0	0	2	0	3	54
Fort Worth	0	------	0	0	2	1	0	1	0	1	28
Galveston	0	------	0	0	2	0	0	0	0	0	12
Houston	0	------	0	0	3	0	0	3	10	4	72
San Antonio	0	------	0	0	3	0	0	3	0	0	57
Montana:											
Billings	0	------	0	0	1	0	0	0	0	1	10
Great Falls	0	------	0	5	0	1	0	0	0	0	8
Helena	0	------	0	0	1	0	0	0	0	0	6
Missoula	0	------	0	0	0	0	0	0	0	0	10
Idaho:											
Boise	0	------	0	0	1	0	0	0	0	0	6
Colorado:											
Colorado Springs	0	------	0	0	0	8	0	1	0	0	15
Denver	8	------	0	2	1	3	0	4	0	9	76
Pueblo	0	------	0	0	1	0	0	0	0	6	10
Utah:											
Salt Lake City	0	------	1	3	1	2	0	3	0	27	30
Washington:											
Seattle	0	------	0	33	4	0	0	2	0	9	77
Spokane	0	------	0	5	2	1	0	1	0	0	36
Tacoma	0	------	0	5	0	0	0	0	0	2	32
Oregon:											
Portland	0	------	0	8	2	1	0	1	0	2	79
Salem	0	------	------	0	------	0	0	------	0	0	------
California:											
Los Angeles	6	1	0	37	5	6	0	17	2	20	263
Sacramento	0	------	0	6	2	1	0	1	0	2	21
San Francisco	1	------	0	1	1	0	0	5	1	6	129

State and city	Meningitis, meningococcus		Poliomyelitis cases	State and city	Meningitis, meningococcus		Poliomyelitis cases
	Cases	Deaths			Cases	Deaths	
Massachusetts:				Iowa:			
Boston	0	0	1	Des Moines	0	0	1
Connecticut:				Missouri:			
New Haven	1	1	0	St. Louis	0	0	1
New York:				Nebraska:			
Buffalo	0	0	1	Omaha	0	0	4
New York	4	0	9	Maryland:			
Syracuse	0	0	1	Baltimore	0	0	1
New Jersey:				North Carolina:			
Camden	0	0	2	Raleigh	0	1	0
Pennsylvania:				South Carolina:			
Philadelphia	0	0	4	Charleston	0	0	5
Pittsburgh	1	0	4	Georgia:			
Ohio:				Atlanta	0	0	2
Cincinnati	1	0	4	Savannah	0	0	1
Cleveland	0	0	3	Texas:			
Toledo	0	0	1	San Antonio	1	0	1
Illinois:				Colorado:			
Chicago	0	0	2	Pueblo	0	0	1
Michigan:				California:			
Detroit	0	0	37	Los Angeles	0	0	16
Wisconsin:				Sacramento	0	0	1
Milwaukee	1	0	0				
Minnesota:							
St. Paul	0	0	3				

Encephalitis, epidemic or lethargic.—Cases: New York, 3; Philadelphia, 1; Scranton, 1; Minneapolis, 1; St. Louis, 1; Grand Forks, 1; Omaha, 1; Topeka, 1.

Pellagra.—Cases: Charleston, S. C., 1; Savannah, 2; Birmingham, 1; Dallas, 1.

Rabies in man.—Cases: Pittsburgh, 1. Deaths: Pittsburgh, 1; Memphis, 1.

Typhus fever.—Cases: New York, 2; Charleston, S. C., 8; Savannah, 3; Tampa, 3; Mobile, 3; Fort Worth, 1; Galveston, 3; Houston, 9.

FOREIGN REPORTS

FINLAND

Communicable diseases—June 1939.—During the month of June 1939, cases of certain communicable diseases were reported in Finland as follows:

Disease	Cases	Disease	Cases
Diphtheria	145	Poliomyelitis	9
Influenza	1,499	Scarlet fever	674
Paratyphoid fever	62	Typhoid fever	8

WORLD DISTRIBUTION OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

From medical officers of the Public Health Service, American consuls, International Office of Public Health, Pan American Sanitary Bureau, health section of the League of Nations, and other sources. The reports contained in the following table must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

CHOLERA

[C indicates cases; D, deaths; P, present]

Place		Jan. 1–28, 1939	Jan. 29–Feb. 25, 1939	Feb 26–Mar. 25, 1939	Mar. 26–Apr. 29, 1939	Week ended— May 1939 6	13	20	27	June 1939 3	10	17	24	July 1939 1	8	15	22	29
Afghanistan	C																	
	D														82			
Kandahar Province:																		
Greshk	C													5				
Tchakhansour	C															P		
Ceylon:																		
Batticaloa	C																	
	D														1			
China:[1]																		
Canton	C							P	9									
	D								6									
Fatshan	C							P										
	D								154									
Foochow	C	6																
	D	2																
Hainan Island	C							P										P
Hankow	C																	
Honan	C							P										
Hong Kong	C	5				2	4	9	10	16	27	20	50	100	60	17	22	15
	D	2				1	2	10	6	9	13	20	38	62	38	11	19	6
Macao	C				1		1	9	10	9	20	30		95	103	59	81	65
	D						1	5	6	6	11	16		68	58	32	30	
Shanghai	C										1						2	
Whampoa	C							P										
India	C	3,871	4,915	6,667	11,896	1,772	1,827	1,918	1,600									
	D	1,924	2,567	3,013	5,502	887	807	891	748									
Akyab	C					1				1					1			
Allahabad	C			[2] 1					1				[3] 1				7	17
Assam	C	427	113	238	220	35	69	185	116	115	105	58	43	43	20			
	D	295	67	98	105	17	26	75	38	39	41	23	14	22	7			
Bassein	C			1	2	2		2	2	3	1	[3] 1						
Bengal Presidency	C	4,477	3,157	4,941	8,754	911	915	699	668	550	466	430	594	703	820			
	D	2,307	1,606	2,297	4,174	449	417	337	301	248	199	198	229	325	375			

[1] During the week ended Aug. 5, 26 cases of cholera were reported in Hong Kong, and 20 in Macao, China.

[2] Suspected.

[3] Imported.

WORLD DISTRIBUTION OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

CHOLERA—Continued

[C indicates cases; D, deaths; P, present]

Place		Jan. 1–28, 1939	Jan. 29–Feb. 25, 1939	Feb 26–Mar. 25, 1939	Mar. 26–Apr. 29, 1939	Week ended— May 1939				June 1939				July 1939				
						6	13	20	27	3	10	17	24	1	8	15	22	29
India—Continued.																		
Bihar Province	C						142	203	239	263								
	D						54	84	126	107								
Bombay Presidency	C	258	205	98	157	23	44	67	62	35	27	10	26				237	
	D	111	87	34	61	9	20	30	24	16	12	5	4				98	
Calcutta	C	59	118	315	963	196	245	196	184	99	140	111	243	206	169	123	88	
Cawnpore	C			3	3		1	3		3	2	1	4	1	3		1	
	D			1			1		1		1	1	2	1	2		1	
Central Provinces and Berar	C	95	61	71	184	55	57	39	43	7	11	7	9		7	16	22	5
Chittagong	C			2	12	[1] 1	2	5	1	1	1		[1] 1				2	
Delhi	C																1	
	D				1													
Howrah	C	98	255	482	785	128	95	94	103									
Karachi	C																1	
Madras Presidency	C	1,464	997	201	84	6	20	24	10	16							20	
	D	627	496	93	30	3	4	9	8	5							6	
Madras	C		3	2								1						
	D		2															
Negapatam	C	2																
Orissa Province	C	36	73	56	161	27	46	7	31	25	40	64	44	99	127	168	165	
Rangoon	C				4	7		2		2		[1] 1	1					
Tirumalaivasal	C		5															
India (French):																		
Chandernagor Territory	C	2	1	16	22													
Karikal Territory	C	5	41															
Pondichery Province	C				1													
Tonkin Province	C																1	
Iran: Zabol	C													1				
Siam:																		
Bangkok	C				4		1											
Smud Prakar Province	C			5	13													
On vessels:																		
S. S. *Erinpura* at Rangoon from Calcutta	C							1										
S. S. *Amra* at Calcutta from Rangoon	C										1							
S. S. *Tin How* at Singapore from Hong Kong	C														1			

[1] Imported.

[1] Imported.

PLAGUE[1]

[C indicates cases; D, deaths; P, present]

Place		Jan. 1–28, 1939	Jan. 29–Feb. 25, 1939	Feb. 26–Mar. 25, 1939	Mar. 26–Apr. 29, 1939	Week ended— May 1939 6	13	20	27	June 1939 3	10	17	24	July 1939 1	8	15	22	29
Algeria: Algiers	C			1														
Argentina	C															1		1
	D															1		1
Belgian Congo[2]	C			3			1	4	2	11							1	
Bolivia. (See table below.)																		
Brazil. (See table below.)																		
British East Africa:																		
Kenya	C		3															
Nyasaland	C																P	
Uganda	C	14	30	24	17	2	3	4	8	2	12		8	15				
	D	14	29	24	17	2	3	4	8	2	12		8	15				
China: Manchuria.[3]																		
Dutch East Indies: Java and Madura	C	252	259	236	167													
	D	242	256	232	165													
Ecuador:																		
Chimborazo Province	C			6	18													
Riobamba	C		[4] 16															
	D		15															
Guayaquil	C			1	2													
	D				2													
Plague-infected rats			1	3														
Loja	C		[4] 4															
Pueblo Viejo	C		3															
Egypt: Asyut Province	C	1	[4] 32	22	35	3	3	1	3	2								
Hawaii Territory: Plague-infected rats:																		
Hawaii Island—Hamakua District:																		
Hamakua Mill Sector						1												
Honokaa					1													
Kapulena					2							1						
Kukaiau		6	1	3														
Paauhau Sector		3	1	5										1				
Paauilo													1					

See footnotes at end of table.

WORLD DISTRIBUTION OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

PLAGUE—Continued

[C indicates cases; D, deaths; P, present]

Place		Jan. 1–28, 1939	Jan. 29–Feb. 25, 1939	Feb 26–Mar. 25, 1939	Mar. 26–Apr. 29, 1939	Week ended— May 1939				June 1939				July 1939				
						6	13	20	27	3	10	17	24	1	8	15	22	29
India	C	2,015	3,443	5,718	10,527	349	207	114	100									
	D	970	1,391	2,636	3,119	266	118	63	77									
Allahabad	D		[8] 1															
Bassein [7]	C			3							1				2			
Plague-infected rats				1														
Bihar Province	C						1	12										
	D						1	1	7									
Bombay Presidency	C	51	27	33	46	4	3	1	3	3	2		1				2	
	D	29	13	20	23	4	2	1	1	1	1						1	
Burma	C																30	14
	D																23	13
Calcutta	C				1													
Calicut	C						1											
Central Provinces and Berar	C	715	1,414	2,056	1,914	132	37	27	2	3			3					
Cochin: Plague-infected rats		1											1	1				
Coorg Province	C				4		1					1						
Delhi	C																1	
Madras Presidency	C	140	164	28	15	3		2	8	2								
	D	53	64	19	8	1		2	5	1								
Rangoon	C	3	61										1					
	D	2											1					
Indochina (see also table below):																		
Cambodia	C										1							
Pnom Penh	C				1													
Madagascar. (See table below.)																		
Peru. (See table below.)																		
Siam:																		
Bichitr Province	C						3	1										
	D						1											
Bisnulok Province	C	1	33	1														
	D	1	5															
Lampang Province	C		1															
Prae	C	3			3													
Svargalok Province	C	11	17	2														
Tak Province	C	7	3															

Tunisia: Tunis	C				1														
Plague-infected rats		2	3																
Union of South Africa	C	8	18	22	9														
Cape Province	C	2	7	4	4	1													
Orange Free State	C		4	6	7														
Transvaal	C			7															
United States.[9]																			

[1] Including plague in the United States and its possessions.
[2] On Aug. 3, 1939, 1 case of plague was reported in Dodro, Belgian Congo.
[3] Information dated May 5 stated that 34 cases of plague with 8 deaths had occurred in Hsinking, Manchuria, since the beginning of the year.
[4] Pneumonic.
[5] Unofficially reported.
[6] Includes 4 pneumonic cases.
[7] On August 5, 1 case of plague was reported in Bassein, India.
[8] Imported.
[9] Last reported human case, Aug. 30, 1937, Fresno County, Calif. Intensive plague work is being conducted in the Western States and detailed reports of plague infection found in animals and insect hosts are published currently in the PUBLIC HEALTH REPORTS. The following summarizes recent reports for 1938 and 1939: *California*—Ground squirrels, Mar. and Apr. 18, 25, and 26, 1939; insects, March and June 8, 1939; *Idaho*—Insects, June 14, 1939; *Nevada*—Insects, Apr. 7–8, 1939; *New Mexico*—Kangaroo rat, Apr. 15, 1939; *Oregon*—Ground squirrels, June 4, 1939; insects, May and June 4, 1939; *Washington*—Rabbit, May 27, 1939; insects, May and June 27, 1939.

Place		January 1939	February 1939	March 1939	April 1939	May 1939	June 1939	Place		January 1939	February 1939	March 1939	April 1939	May 1939	June 1939
Bolivia	C			[4] 1				Madagascar (central region)	C	79	77	52	33	16	11
Brazil:									D	42	67	21	25	14	10
Alagoas State	C	19	5	11	1			Peru	C	14	9	12	11	11	3
Bahia State	C			1				Cajamarca Department	C			3			
Parahiba State	C	1						Lambayeque Department	C	2		1	1	1	
Pernambuco State	C	15	3	5	6			Libertad Department	C	11	4	1	2	3	1
Sao Paulo State	C				1			Lima Department	C	1	4	2	1		1
Indochina: Cambodia	C		2					Piura Department	C		1	5	7	7	1

[4] Pneumonic.

WORLD DISTRIBUTION OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX

[C indicates cases; D, deaths; P, present]

Place		Jan. 1–28, 1939	Jan. 29–Feb. 25, 1939	Feb. 26–Mar. 25, 1939	Mar. 26–Apr. 29, 1939	Week ended— May 1939 6	13	20	27	June 1939 3	10	17	24	July 1939 1	8	15	22	29
Algeria: Oran Department	C				1				2				1					
Arabia: Aden	D		1															
Argentina. (See table below.)																		
Belgian Congo. (See table below.)																		
Bolivia. (See table below.)																		
British East Africa:																		
Nairobi	C											26						
Tanganyika	C	1	174	96	146		3		6	17		4						
Canada:																		
Alberta	C		37	7									22					
British Columbia	C		4	8														
Manitoba	C	8	1	22	13	2							1					
Ontario	C		1															
Saskatchewan	C	17	10	2								1		1				
Canary Islands: **Las Palmas**	C			13														
Ceylon: Maskeliya	C			1														
China (see also table below):																		
Dairen	C	1		2	4		1	1	3	1	1			2				
Foochow	C	8		2	8	5	3											1
Hong Kong	C	18	45	45	34	3	2	5	1	1				1				
	D	13	23	49	26	5	2	1	3	1				1				
Macao	C		3															
Shanghai	C	834	274	102	50	9	4	1	4	2	2	1	3	2	1			
Swatow	C	1	3	2	7													
Tientsin	C		1		4			1			1							
Chosen (Korea). (See table below.)																		
Colombia (see also table below): **Cartagena**	D		1	2	1											1		
Dahomey. (See table below.)																		
Ecuador: **Guayaquil**	C			4	1								3					
	D			1	1								1					
Eritrea: Massaua	C															1		
France. (See table below.)																		
French Equatorial Africa: Chad	C				14													
Germany: **Hamburg**	C																2	
Great Britain: England and Wales—**Liverpool**	C	1																
Greece (see also table below):																		
Salonika	C														11	1		
Guatemala. (See table below.)																		
Guinea	C														40			

India	C	7,797	11,353	15,237	18,580	4,109	4,690	4,682	4,122									
	D	1,777	2,536	3,254	4,895	1,003	1,014	1,063	971									
Allahabad	C	1		2				1						1				
Assam	C	67	58	121	225	59	56	87	50	24	36	35	32	20	7			
Bengal Presidency	C	572	1,735	2,152	3,305	411	488	393	328	230	202	184	165	164	148			
	D	203	632	724	1,242	166	169	136	134	87	78	60	70	52	60			
Bihar Province	C						603	853	904	672								
Bombay Presidency	C	1,388	1,514	3,936	6,398	1,111	1,010	987	953	806	755	642	606	527			252	
	D	187	220	558	961	155	152	136	155	118	109	82	106	115			62	
Bombay	C	12	20	56	61	9	12	6	14	9	12	9	10	15	16	5	4	
	D	8	11	21	20	4	6	2	5	7	5	6	3	9	8	5	4	
Burma	C													1	1		2	4
	D																1	2
Calcutta	C	400	776	806	910	100	70	59	69	34	40	22	31	33	32	26	12	
	D	231	451	548	676	78	54	52	51	25	31	17	22	19	20	23	7	
Cawnpore	C	4	2	5	14	7	4	2	3	1		2						
Central Provinces and Berar	C	81	198	540	1,132	184	203	284	233	265	154	174	164	119	116	62	38	
Chittagong	C		1										1					
Cochin	C		4		3								1					
Delhi	C	96	113	133	187	44	47	48	64	39	23	15	22	10	7	5	7	
Howrah	C	67	148	152	222	31	43	29					10					
Jodhpur	D						19	9	10		3	3	1		4	1	6	
Karachi	C	3	3	3	3	1	4	1	2	1						1		
Madras Presidency	C	1,058	1,389	1,400	1,020	180	170	101	94	110							55	
	D	370	233	234	241	51	41	35	28	29							8	
Madras	C	171	304	236	193	18	8	2	4	5	5		21	3	1	4	3	
Moulmein	C	1											1					
Northwest Frontier Province	C	155	113	114	110	19	10	10	47	62	37	54	12	22	15	30	19	
Orissa Province	C	338	465	699	1,039	290	155	140	137	84	117	89	86	60	111	75	95	
Punjab	C	196	329	180	191	61		41	112	97	72	45		48	24	8		
Rangoon	C	9	5	14	10	4	3	5	2	6	2	2		1			1	
Sind State	C	158	299	279	251	58	60	42	49		44	64	23	53	21	59	20	
Vizagapatam	C				6													
India (French):																		
Chandernagor Territory	C		2		4	3												
Pondichery Territory	C		6	7	3													
	D		4	3	2													
Indochina (French) (see also table below):																		
Tonkin Province	C	214	183	211	228	73		33	29	20	20	14		1		1		
Haiphong	C		2															
Hanoi	C	1	10	6	13	4		7	11		3							
Saigon-Cholon	C	6	3															
Iran	C	1		11	10		3				1		2					
Iraq	C	6	1		6					2		2	2					
Baghdad	C						1	1										
Ivory Coast. (See table below.)																		
Japan:																		
Kanagawa prefecture	C	1																
Kobe	C	4	66	16														
Kyoto	C	13	1															

See footnotes at end of table.

WORLD DISTRIBUTION OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX—Continued

[C indicates cases; D, deaths; P, present]

Place		Jan. 1–28, 1939	Jan. 29–Feb. 25, 1939	Feb 26–Mar. 25, 1939	Mar. 26–Apr. 29, 1939 1939	Week ended— May 1939 6	13	20	27	June 1939 3	10	17	24	July 1939 1	8	15	22	29
Japan—Continued.																		
Nagoya	C			1														
Osaka	C		1	1	1	1	1	2	1		1							
Taiwan.[3]																		
Tokyo	C		5		1													
Mexico (see also table below):																		
Mexico, D. F.	C	1	3	6	3			1	2	2	1	2		1				
Monterrey	C	4	2	1	1													
Piedras Negras	D			1														
San Luis Potosi	D		5	3	1				1			3	1	1				
Tampico	C		7	22	1													
Morocco. (See table below.)																		
Mozambique	C			11	11	4	12	9	7	1								
Nigeria	C	320	934	884	1,261	209	197	79	29	16	22	21	17	25				
Calabar	C	1	6	5	3	42	2											
Lagos	C			1		2		2										
Port Harcourt	C	3	1	1								1						
Niger Territory. (See table below.)																		
Portugal (see also table below):																		
Lisbon	C	42	21	21	34	8	7	4	14	17	13	9	14	6	7	10	3	
Oporto	C	5	14	2	2		7	1		1	2	5	2	4			5	
Portuguese Guinea. (See table below.)																		
Salvador. (See table below.)																		
Senegal. (See table below.)																		
Siam	C	48		2	2					1				2	1		24	
Sierra Leone	C	4	9	2	8	9												
Society Islands:																		
Tahiti	C														12			
Southern Rhodesia	C	37	48		21		1	9	1			3						
Spain. (See also table below.)																		
Barcelona	C														1	4		
Malaga	D													2				
Valencia	C											1						
Straits Settlements: Singapore	C			1														
Sudan (Anglo-Egyptian)	C	28	18	17	90	6	1		5	7	1	5	2	1		1	21	3
Sudan (French):																		
Macina	C												19					
Niafunke	C												8					

Syria: Aleppo	C				1																		
Turkey. (See table below.)																							
Uruguay	C				1				4														
Venezuela. (See table below.)																							

[1] Imported.

[2] Information dated Apr. 6, 1939, states that up to Mar. 31, 1939, 61 cases of smallpox were reported in Taiwan, Japan.

On vessels:

S. S. *Selandia* at Singapore from Saigon	1 case	Jan.	15, 1939
S. S. *Pottsdam* at Singapore from Yokohama	1 case	Jan.	17, 1939
S. S. *E. Sang* at Swatow from Shanghai	1 case	Jan.	18, 1939
S. S. *Maihar* at Aden from Calcutta	1 case	Jan.	30, 1939
S. S. *Alari* at Aden from Bombay	1 case	Feb.	2, 1939
S. S. *Orange Moor* at Saigon from Shanghai	1 case	Do.	
S. S. *Queen Victoria* at Victoria from Shanghai	1 death	Feb.	6, 1939
S. S. *Rugelsey* at Williamshead from Shanghai	10 cases	Feb.	19, 1939
Pilgrim ship *Tantalus* at Penang from Jeddah	1 case	Feb.	27, 1939

On vessels:—Continued

Pilgrim ship *Ajax* at Penang from Jeddah	1 case	Mar.	2, 1939
S. S. *Gneisenau* at Genoa	1 case	Mar.	5, 1939
S. S. *Riley* at Fremantle from Shanghai	1 case	Do.	
S. S. *Mau Sang* at Sandakan from Hong Kong	1 case	Apr.	6, 1939
S. S. *Thistleglen* at Singapore	1 case	Apr.	10, 1939
S. S. *Empress of Russia* at Hong Kong from Shanghai	2 cases	Apr.	20, 1939
S. S. *Liebenfels* at Rangoon from Moulmein	1 case	June	2, 1939
S. S. *City of Pittsburgh*, Manila, P. I.	1 case	June	28, 1939
S. S. *Atalaya* at New Orleans	1 case	July	25, 1939

Place		January 1939	February 1939	March 1939	April 1939	May 1939	June 1939
Argentina	C		3				
Belgian Congo	C	175	26			169	199
Bolivia:							
Cochabamba Department	C			8			
La Paz Department	C			8			
Oruro Department	C			1			
Potosi Department	C			1			
Santa Cruz Department	C			6			
China: Harbin	C	2	1	5	5	1	1
Chosen (Korea)	C			42			
Colombia (see also table above)	C	25					
Dahomey	C	12		4			
Ecuador: Guayaquil and vicinity	C						5
France	C	1	3				
Greece	C	12	1	38	7	11	
Guatemala	C		5		4		
Indochina (French) (see also table above)	C	312	163	515	606	671	178
	D	47	21	79	52	109	31
Ivory Coast	C	18	59	17			10
Malta	C						

Place		January 1939	February 1939	March 1939	April 1939	May 1939	June 1939
Mexico (see also table above):							
Aguascalientes State—Aguascalientes	C		[1] 15	3			
Chihuahua State—Chihuahua	C		[1] 1				
Hidalgo State	C		[1] 29	7			
Jalisco State—Guadalajara	C		[1] 1				
Mexico, D. F.	C		[1] 7	9			
Nuevo Leon State—Monterrey	C			3			
Queretaro State	C		[1] 1				
San Luis Potosi State—San Luis Potosi	C		[1] 16	11			
Sonora State—Guaymas	C			1			
Tamaulipas State—Tampico	C		9	15			
Morocco	C	2		1		6	
Niger Territory	C	48	34	40	9		3
Portugal (see also table above)	C			112			
	D			11			
Portuguese Guinea	C				115		
	D				8		
Salvador	C			1			
Senegal	C		35	66	42	55	25
Spain	C					49	
Turkey	C	58	8		59	34	
Venezuela	D	2	8	6	3	7	6

[1] For January and February.

WORLD DISTRIBUTION OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

TYPHUS FEVER

[C indicates cases; D, deaths; P, present]

Place		Jan. 1–28, 1939	Jan. 29–Feb. 25, 1939	Feb. 26–Mar. 25, 1939	Week ended— April 1939					May 1939				June 1939				July 1939				
					1	8	15	22	29	6	13	20	27	3	10	17	24	1	8	15	22	29
Algeria:																						
Algiers Department	C	9	14	29	6		6	1	8		11		15	12	28	25	9	18				
Algiers	C	2		16					5		10		12	7		7		2				
Constantine Department	C	115	90	164	30	19	38	54	54	69	13		106	42	43	56	56	33				
Bone	C	4		2	1			5	3	1												
Constantine	C	11	8	7		4	8	27		10	8		34	3		31		6				
Philippeville	C	3	1	14		2				2			7	4		1	1					
Oran Department	C	28	29	29	2	7	2	4	16	6	2		20	7	5	21	6	7				
Southern Territories	C		7	21	9		1	9	3		36		26	17		4						
Australia:																						
Brisbane	C			1													1	1				
Queensland	C		5		3	1	1				1											
Bolivia. (See table below.)																						
British East Africa: Kenya	C		1				1															
Bulgaria. (See table below.)																						
Chile	C	80	49	43																		
Antofagasta Province	C	2	1		9	2		6														
Bio Bio Province	C	2	4	5																		
Cautin Province	C		2	1				1														
Coquimbo Province	C		12	2																		
Curico Province	C	15	1																			
Los Angeles	C	9																				
Nuble Province	C	2	1																			
Santiago Province	C	50	40	25				2														
Valdivia Province	C	1	1					3														
Valparaiso	C		1		1						1								1		1	3
China (see also table below):																						
Dairen	C											1	1									
Hankow	C											1				1						
Shanghai	C	6								2							12	7	14			
Tientsin	C	2			1				2		1											
Chosen (Korea). (See table below.)																						
Egypt:																						
Alexandria	C			3	4	2	1		6	5	8	3	10	9	3				1	2		1
Asyut Province	C	1	4		2			1	11	8	2	1	4	3								
Beheira Province	C	1	24	44	22	17	13	29	28	20	10	8	26	7	6							
Beni Suef Province	C												1									
Cairo	C	3	18	31	6	2	3	12	4	2	1	2	4	2			3				1	
Dakahilya Province	C		11	106	25	20	36	51	46	49	44	48	55	54	37							

Faiyum Province	C						7															
Gharbiya Province	C	15	51	245	64	104	97	48	42	50	34	76	56	45	39							
Girga Province	C	4	58	47	14	12	3	12	1	3	4	7	17	18	7							
Giza Province	C		16	16	8	2	8	21	14	9		9	4	8	11							
Kalyubiya Province	C		33	84	3	8	3	12	18	6	8	10	21	16	5							
Minufiya Province	C	3	67	101	9	6	11	25	45	40	45	19	37	21	12							
Qena Province	C			47	61	18	13	20	15	6	4	1	10	2	4							
Sharkiya Province	C		17	46	11	25	6	12	12	4	5		15	11	5							
Provinces	C	70	323	748	229	216	199	234	232	195	200	186	247	186	126	90	59	19	91	92	53	18
Eritrea: Hamasien	C			4												5						
Greece. (See table below.)																						
Guatemala. (See table below.)																						
Hawaii Territory: Honolulu	C	1	1	1						1						1						
Hungary	C	1		5		4			5										1			
India: Coorg Province	C			5			3								3							
Iran	C		1				1			2	9		7	6	4	2	8					
Iraq	C		2															2	1		1	1
Arbil Province	C												1	2		1	1					
Baghdad	C			1				1	2	1	1						1					
Kirkuk Province	C		1										7									
Irish Free State: Louth County—																						
Drogheda	C																	5				
Latvia. (See table below.)																						
Libya: Suani Benaden	C	3																				
Lithuania. (See table below.)																						
Mexico (see also table below):																						
Mexico, D. F	C	5	4	2	4	1						5	8	7	7	7		4				
Monterrey	C												1				3			3		
Nuevo Laredo	D																					
Saltillo	C														1							
San Luis Potosí	D					1				1												
Torreon	D		1					2		1											1	
Morocco	C	111	152	177	41	26	42	47	37	45	36	42	22	28	30	29		10	5	6		
Casablanca	C	1	6		2	2	4	4						1				1				
Palestine:																						
Haifa	C		1						2		2	1	1			3		1		1		1
Jaffa	C	3		1			1						2			3		5		1		1
Jerusalem	C															8		14				
Panama Canal Zone	C												1				1					
Poland	C	357	463	580	145	165	151	158	167	109	99	101	125	97	81	78	46	60				
	D	14	20	23	10	6	5	7	6	6	5		1	3	6	2	2	2				
Portugal: Oporto	C	2					2	1														
Portuguese East Africa: Laurenco Marques	C			2																		
Rumania. (See table below.)																						
Spain. (See table below.)																						
Straits Settlements: Singapore	C	2	5	1			1															
Sumatra: Medan	D		1																			
Swaziland. (See table below.)																						
Syria:																						
Aleppo	C		2																			
Beirut	C			1																		
Lebanese Republic	C				1				1													
Trans-Jordan	C							7	1	5	1	3			1			1				

WORLD DISTRIBUTION OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

TYPHUS FEVER—Continued

[C indicates cases; D, deaths; P, present]

Place		Jan. 1–28, 1939	Jan. 29–Feb. 25, 1939	Feb. 26–Mar. 25, 1939	Week ended— April 1939					May 1939				June 1939				July 1939				
					1	8	15	22	29	6	13	20	27	3	10	17	24	1	8	15	22	29
Tunisia:																						
Tunis	C	43	33	64	32	21	8	16	12	6	13	16	4	1	13	2	2	14	1	1	----	----
Provinces	C	436	506	694	185	93	221	282	292	264	248	271	223	202	228	316	221	333	202	181	----	----
Turkey. (See table below.)																						
Union of South Africa. (See table below.)																						
Venezuela. (See table below.)																						
Yugoslavia	C	21	38	49	12	13	3	56	31	13	25	19	5	10	3	17	5	----	----	----	----	----
On vessels:																						
S. S. *Stanbrook* at Mers el Kebir	C	----	----	----	----	----	----	----	1	----	----	----	----	----	----	----	----	----	----	----	----	----
S. S. *Normandie* at Plymouth	C	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	----	----	----	----

Place		January 1939	February 1939	March 1939	April 1939	May 1939	June 1939
Bolivia:							
Cochabamba Department	C	----	----	1	----	----	----
Potosi Department	C	----	----	7	----	----	----
Tarija Department	C	----	----	1	----	----	----
Bulgaria	C	8	----	----	14	1	----
China: Manchuria—Harbin	C	5	----	23	4	16	14
Chosen (Korea)	C	78	9	106	----	----	----
Greece	C	9	----	----	----	----	----
Guatemala	C	9	22	25	14	4	8
Latvia	C	2	----	----	1	----	----
Lithuania	C	30	42	32	23	6	----
Mexico (see also table above):							
Aguascalientes State—Aguascalientes	C	----	[1] 11	2	----	----	----
Hidalgo State	C	----	[1] 2	1	----	----	----
Mexico State	C	----	[1] 8	----	----	----	----
Mexico, D. F	C	2	[1] 14	9	----	----	----
Queretaro State	C	----	[1] 4	----	----	----	----

Place		January 1939	February 1939	March 1939	April 1939	May 1939	June 1939
Mexico—Continued							
San Luis Potosi State—San Luis Potosi	C	----	[1] 8	3	----	----	----
Tamaulipas State	C	----	[1] 1	----	----	----	----
Portugal (see also table above)	C	----	----	----	----	----	----
Rumania	C	144	121	205	28	40	36
Spain	C	----	----	----	4	----	9
Swaziland	C	1	----	----	----	----	----
Turkey	C	32	46	57	62	49	----
Istanbul	C	6	----	4	4	----	3
Union of South Africa:							
Cape Province	C	23	25	17	32	----	----
Natal	C	1	3	2	35	----	----
Orange Free State	C	----	1	3	4	----	----
Transvaal	C	26	----	16	16	----	----
Venezuela: Bolivar	C	----	----	----	1	3	----

[1] For January and February 1939.

YELLOW FEVER

[C indicates cases; D, deaths; P, present]

Place		Jan. 1–28, 1939	Jan. 29–Feb. 25, 1939	Feb. 26–Mar. 25, 1939	Week ended—															
					April 1939					May 1939				June 1939				July 1939			
					1	8	15	22	29	6	13	20	27	3	10	17	24	1	8	15	22
Brazil: [1]																					
Espirito Santo State	D	4	42	21	9	6	5	7	1				[2] 1								
Minas Geraes State	D		8	3		1		1													
Para State	D												[2] 1								
Rio de Janeiro State	D	2		1																	
Colombia: Antioquia Department:																					
Caracoli	D													1			1				
San Carlos	D																1				
French Equatorial Africa:																					
Chad—Port Lamay	C	1																			
Cameroon—Bafia	C																		[4] 1		
French Guinea	C															2					
Gold Coast	C		[4] 1																		
Ivory Coast [3]	C		3			[4] 2	1	1		[4] 3			2	1	[5] 8						
	D		1																		
Nigeria	C	2	2	1																	
	D	1	2																		
Niger Territory: Tahua	C												[4] 1								1

[1] See also reports of yellow fever in Brazil in preceding issues of the PUBLIC HEALTH REPORTS.
[2] Jungle type.
[3] On Aug. 3, 1 case of yellow fever was reported at Dedougou, Ivory Coast.
[4] Suspected.
[5] Includes 4 suspected cases.
[6] Exact date not given.